MINUTES

REGULAR MEETING

Honorable Bernard C. "Jack" Young, President
Honorable Catherine E. Pugh, Mayor
Honorable Joan M. Pratt, Comptroller and Secretary
Rudolph S. Chow, Director of Public Works
David E. Ralph, Interim City Solicitor
S. Dale Thompson, Deputy Director of Public Works
Bernice H. Taylor, Deputy Comptroller and Clerk

President: "Good morning. The May 17, 2017, meeting of the Board of Estimates is now called to order. In the interest of promoting the order and efficiencies of these hearings, persons who are disruptive to the hearing will be asked to leave the hearing room immediately. Meetings of the Board of Estimates are open to the public for the duration of the meeting. The hearing room must be vacated at the conclusion of the meeting. Failure to comply may result in a charge of trespassing. I will direct the Board members attention to the memorandum from my office dated May 15, 2017, identifying matters to be considered as routine agenda items together with any corrections and additions that have been noted by the Deputy Comptroller. I will entertain a Motion to approve all of the items contained on the routine agenda."

Interim City Solicitor: "I Move the approval of the items on the routine agenda."

Comptroller: "Second."

President: "All those in favor say AYE. All opposed, NAY. The motion carries the routine Agenda has been adopted.

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MINUTES

BOARDS AND COMMISSIONS

1. Prequalification of Contractors

In accordance with the Rules for Prequalification of Contractors, as amended by the Board on October 30, 1991, the following contractors are recommended:

Bay Associates Environmental, Inc.	$ 1,500,000.00
Brayman Construction Corporation	$ 1,500,000.00
Casper Colosimo & Son, Inc.	$109,458,000.00
Chilmar Corporation	$ 8,000,000.00
Environmental Quality Resources, LLC	$134,920,000.00
Grunley Construction Company, Inc.	$343,440,000.00
Kinsley Construction, Inc.	$620,870,000.00
Meadville Land Service, Inc.	$ 1,500,000.00
Micon Constructions, Inc.	$ 1,500,000.00
Robert Whalen Company, Inc.	$ 810,000.00
Ruff Roofers, Inc.	$ 8,000,000.00
Simon Development & Construction Corporation	$ 7,090,000.00
Weeks Marine, Inc.	$794,400,000.00

2. Prequalification of Architects and Engineers

In accordance with the Resolution Relating to Architectural and Engineering Services, as amended by the Board on June 29, 1994, the Office of Boards and Commissions recommends the approval of the prequalification for the following firms:

ATCS, P.L.C.	Engineer
BLV Engineering Associates, Inc.	Engineer

BOARDS AND COMMISSIONS – cont'd

BrightFields, Inc.	Engineer
DM Enterprises of Baltimore, LLC	Engineer
Mercado Consultants, Inc.	Engineer Land Survey Property Line Survey
Mincin Patel Milano, Inc.	Engineer
Morabito Consultants, Inc.	Engineer
RJM Engineering, Inc.	Engineer
Schrader Group Architecture, LLC	Engineer Architect
Skarda And Associates, Inc.	Engineer
Transviron, Inc.	Engineer Land Survey
Wallace, Montgomery & Associates, LLP	Engineer Land Survey
WFT Engineering, Inc.	Engineer

There being no objections, the Board, UPON MOTION duly made and seconded, approved the prequalification of contractors and architects and engineers for the listed firms.

MINUTES

Law Department – Settlement Agreement and Release

ACTION REQUESTED OF B/E:

The Board is requested to approve and authorize execution of the Settlement Agreement and Release for the action brought by Makia Smith, Plaintiff, against the Baltimore City Police Department and the Mayor and City Council of Baltimore City for alleged battery and state and federal constitutional torts.

AMOUNT OF MONEY AND SOURCE:

$220,000.00 – 1001-000000-2041-716700-603070

BACKGROUND/EXPLANATION:

On March 8, 2012, at about 4 o'clock in the afternoon, the Plaintiff was driving in the 2800 block of Harford Road. The Plaintiff stopped her car in the street after observing some non-party Baltimore City police officers interacting with another individual not connected with this case. The Plaintiff then proceeded to use her cell phone camera to make a video of what was happening in that interaction. Officers demanded that the Plaintiff move her vehicle from the roadway. The Plaintiff contends that the defendant officers destroyed her cell phone in the process of arresting her and acted in retaliation for her making the video. The Plaintiff also alleges that she was pulled from the vehicle and assaulted by excessive means. The officers deny the Plaintiff's contentions and contend that they acted properly in all respects, and that there was no excess force used. The Plaintiff sought medical treatment at Good Samaritan Hospital. The Plaintiff was arrested and charged with second-degree assault, resisting/ interfering with arrest, failing to display a license on demand, willfully disobeying a lawful order, and obstructing the flow of traffic. All charges were subsequently dismissed by the State's Attorney's Office.

Law Department – cont'd

As a result of the incident, the Plaintiff filed suit in Federal court seeking over $1,000,000.00 in compensatory and punitive damages and attorneys' fees. Because of conflicting factual issues and given the uncertainties and unpredictability of jury verdicts, the parties propose to settle the matter for a total sum of $220,000.00 in return for a dismissal of the litigation.

Based on a review of the facts and legal issues specific to this case, the Settlement Committee of the Law Department recommends that the Board of Estimates approve the settlement of this case as set forth herein.

APPROVED FOR FUNDS BY FINANCE

UPON MOTION duly made and seconded, the Board approved and authorized execution of the Settlement Agreement and Release for the action brought by Makia Smith, Plaintiff, against the Baltimore City Police Department and the Mayor and City Council of Baltimore City for alleged battery and state and federal constitutional torts.

MINUTES

Baltimore Development Corporation – Office Lease Agreement

ACTION REQUESTED OF B/E:

The Board is requested to approve and authorize execution of the Office Lease Agreement with R.E. Harrington Plumbing and Heating Company, Tenant, in Suite A46 of the Business Center @ Park Circle located at 2901 Druid Park Drive. The period of the Office Lease Agreement is June 1, 2017 through May 31, 2018, with an option to renew for one additional 1-year term.

AMOUNT OF MONEY AND SOURCE:

Annual Rent	Monthly Installment
$3,906.00	$325.50

The rent will escalate 4% annually to allow for any increases in the Landlord's operating costs.

BACKGROUND/EXPLANATION:

R.E. Harrington Plumbing and Heating Company is working on a City contract and is leasing space for the Baltimore City Inspectors.

The space is leased on an "AS IS" basis and does not require the landlord to make any modifications. The Tenant will be responsible for any improvements or build-out of the premises.

All other Landlord services such as utilities, limited janitorial services, maintenance, and repairs to the premises are included in the initial base rent.

Baltimore Development Corporation – cont'd

In addition, the Tenant is obligated to maintain and keep in force general public liability, contractual liability, and property damage insurance protection for the premises and name the City as additionally insured under the insurance policies.

UPON MOTION duly made and seconded, the Board approved and authorized execution of the Office Lease Agreement with R.E. Harrington Plumbing and Heating Company, Tenant, in Suite A46 of the Business Center @ Park Circle located at 2901 Druid Park Drive.

MINUTES

EXTRA WORK ORDERS

* * * * * *

UPON MOTION duly made and seconded,

the Board approved the

Extra Work Orders

listed on the following pages:

1726 - 1727

All of the EWOs had been reviewed and approved

by the

Department of Audits, CORC,

and MWBOO, unless otherwise indicated.

EXTRA WORK ORDERS

Contract Awd. Amt.	Prev. Apprvd. Extra Work	Contractor	Time Ext.	% Compl.
Department of Transportation				
1. EWO #001, ($27.04) – TR 15017, Conduit Manhole Reconstruction at Various Locations				
$ 1,441,526.00 -		Cuddy & Associates, LLC	0	65.50

This authorization is a request by Department's Technical Engineering and Construction Division for an electrical manhole at the southwest corner of Conway Street and Light Street to be constructed to facilitate the proposed development at 414 Light Street. The Contractor was directed by the Department to accelerate construction of this new manhole by working seven days/week, 12 hours/day. The Contractor's cost proposal to install this manhole was reviewed and found to be acceptable. There are portions of unused contract bid items which will be used to offset the cost of this additional work. An Engineer's Certificate of Completion has not been issued.

Department of Public Works/Office of Engineering and Construction				
2. EWO #043, $110,723.59 – WC 1160R, Montebello Plant 2 Finished Water Reservoir Cover				
$36,922,950.00	$6,921,473.70	Alan A. Myers, LP	-	100

The Finished Water Reservoir at Montebello Plant 2 consists of a cast in place reinforced concrete slab, walls, and a precast concrete cover. Sections of this precast cover are

EXTRA WORK ORDERS

Contract Awd. Amt.	Prev. Apprvd. Extra Work	Contractor	Time Ext.	% Compl.

Department of Public Works/Office – cont'd
of Engineering and Construction

connected together by means of embedded plates and welded connections. As work progressed, the Office of Engineering and Construction learned that the embedded plates may have lacked sufficient strength to meet the contract requirements. The Contractor was directed to provide the services of a testing agency acceptable to the City, and to test-in-place some of the connection points. The results of this on-site test showed that the connection points met the contract requirements. The Contractor's original cost proposal for this work was $234,970.00. After review by the engineer and negotiation, this cost has reduced to $110,723.59. This work is now completed and the project is beyond the warranty phase. The Certificate of Completion form will not be completed until a scheduled time after final payment and final completion has been given by the Agency.

MINUTES

Department of Real Estate – Deed

ACTION REQUESTED OF B/E:

The Board is requested to approve and authorize execution of a Deed to Central Avenue, LLC relating to the condemnation and closing all interest in certain parcels of land known as a portion of South Eden Street, extending from Lancaster Street northerly 308± ft. to Aliceanna Street and a portion of Aliceanna Street, extending from South Central Avenue easterly 170± ft., to South Eden Street and are no longer needed for public use.

AMOUNT OF MONEY AND SOURCE:

$95,000.00

BACKGROUND/EXPLANATION:

On August 4, 2016, the City entered into a closing agreement with Central Avenue, LLC. Central Avenue, LLC would like to acquire a portion of S. Eden Street between Aliceanna Street and Lancaster Street, and a portion of A1iceanna Street between S. Central Avenue and S. Eden Street as part of a development proposal to build a new 22 story building with ground floor commercial and residences (the project). In order to accommodate the construction of the new Whole Foods Store and the Project, a larger footprint for the structure is needed. The acquisition of the additional parcels will provide the necessary square footage for the Project.

The sale was authorized by means of Sales Ordinance No. 16-561 approved on November 1, 2016.

Department of Real Estate – cont'd

UPON MOTION duly made and seconded, the Board approved and authorized execution of the Deed to Central Avenue, LLC relating to the condemnation and closing all interest in certain parcels of land known as a portion of South Eden Street, extending from Lancaster Street northerly 308± ft. to Aliceanna Street and a portion of Aliceanna Street, extending from South Central Avenue easterly 170± ft., to South Eden Street and are no longer needed for public use.

MINUTES

Department of Real Estate – Agreement of Sale

ACTION REQUESTED OF B/E:

The Board is requested to approve and authorize execution of an Agreement of Sale with 12460 Dulaney, LLC, Purchaser, for the sale of the property described as the former bed of a portion of Dulaney Valley Road within the Loch Raven Reservoir, adjacent to 12460 Dulaney Valley Road being approximately 3,838 ± sq. ft.

AMOUNT OF MONEY AND SOURCE:

$20,752.20

BACKGROUND/EXPLANATION:

The authority to sell this property was approved by City Council Ordinance No. 16-563, on November 1, 2016. The property described as the former bed of a portion of Dulaney Valley Road within the Loch Raven Reservoir, adjacent to 12460 Dulaney Valley Road being approximately 3,838 ± sq. ft.

The Purchaser will use the property as part of the operation of a restaurant, which is the current use. The Purchaser accepts the property "as is" in its present condition.

UPON MOTION duly made and seconded, the Board approved and authorized execution of the Agreement of Sale with 12460 Dulaney, LLC, Purchaser, for the sale of the property described as the former bed of a portion of Dulaney Valley Road within the Loch Raven Reservoir, adjacent to 12460 Dulaney Valley Road being approximately 3,838 ± sq. ft.

MINUTES

Department of Real Estate – Agreement of Sale

ACTION REQUESTED OF B/E:

The Board is requested to approve and authorize execution of an Agreement of Sale with The New Mt. Zion Baptist Church, Purchaser, for the sale of the City-owned property known as Block 86, Lot 48E.

AMOUNT OF MONEY AND SOURCE:

$2,000.00 – Sale price

BACKGROUND/EXPLANATION:

The authority to sell this property was approved by City Council Ordinance No. 17-004 on March 24, 2017. The property is known as Block 86, Lot 48E, which contains 2,700 square feet. The Purchaser will use the property for parking the church van, off-street parking, community outreach programs, and outdoor services for The New Mt. Zion Baptist Church. The Purchaser accepts the property in its "as is" present condition. The Purchaser will provide, construct, and maintain all necessary footways which abut on and from the perimeter of the property.

STATEMENT OF PURPOSE AND RATIONALE FOR SALE BELOW THE APPRAISED VALUE:

Pursuant to the Appraisal Policy of Baltimore City, the value determined by the appraisal was $3,000.00. The property will be sold to The New Mt. Zion Baptist Church for $2,000.00. The vacant lot will be sold below the price determined by the appraisal because of the following reasons:

(1) The New Mt. Zion Baptist Church has been maintaining the property for over 25 years,

Department of Real Estate – cont'd

(2) the Trustees have been cutting the grass and hedges and maintaining the cleanliness of the area by removing trash and debris throughout the year, and

(3) the sale will continue the elimination of blight.

UPON MOTION duly made and seconded, the Board approved and authorized execution of the Agreement of Sale with The New Mt. Zion Baptist Church, Purchaser, for the sale of the City-owned property known as Block 86, Lot 48E.

MINUTES

Space Utilization Committee - Transfer of Jurisdiction

ACTION REQUESTED OF B/E:

The Board is requested to approve the Transfer of Jurisdiction for the property known as 800 W. North Avenue (Block 3434, Lot 002) from the inventory of the Baltimore City Board of School Commissioners to the inventory of the Department of Housing and Community Development (DHCD).

BACKGROUND/EXPLANATION:

The property is scheduled for demolition by the developer under a Demolition Right-of-Entry. The property will be developed into a mixed use parcel.

The Space Utilization Committee approved this transfer of jurisdiction on May 9, 2017.

UPON MOTION duly made and seconded, the Board approved the Transfer of Jurisdiction for the property known as 800 W. North Avenue (Block 3434, Lot 002) from the inventory of the Baltimore City Board of School Commissioners to the inventory of the Department of Housing and Community Development.

Department of Housing and Community Development – HOME Investment Partnerships Loan

ACTION REQUESTED OF B/E:

The Board is requested to approve a HOME Investment Partnerships Program Loan in the amount of $1,250,000.00 (the HOME Loan) to Metro Heights Limited Partnership, (the Borrower). Proceeds of the HOME Loan will be used to support a portion of the construction and construction-related costs of 70 affordable and market rate rental housing units known as Metro Heights at Mondawmin Apartments, to be located at 2700 Reisterstown Road in the Liberty Square neighborhood of West Baltimore (the Project).

The Board is also requested to authorize the Commissioner of the Department of Housing and Community Development to execute any and all legal documents to effectuate this transaction subject to legal review and approval for form and legal sufficiency.

AMOUNT OF MONEY AND SOURCE (all amounts approximate):

Source of Funds		Uses of Funds	
First Loan	$ 1,825,000.00	Constr. Costs	$15,914,818.00
HOME Funds	1,250,000.00	Constr. Related Fees	1,492,252.00
CDA/Rental Housing	2,000,000.00	Financing Fees & Charges	1,468,946.00
FHLB AHP	500,000.00	Acquisition Costs	493,000.00
Deferred Developer Fee	649,417.00	Syndication Related	117,500.00
Tax Credit Equity	16,050,000.00	Reserves	436,869.00
		Developer Fee	2,351,032.00
TOTAL	**$22,274,417.00**	**TOTAL**	**$22,274,417.00**

Account: 9910-925100-9610

DHCD – cont'd

BACKGROUND/EXPLANATION:

Metro Heights at Mondawmin (Metro Heights) is a proposed 70-unit affordable rental housing development located in the Liberty Square neighborhood of West Baltimore City. Metro Heights is being developed by Enterprise Homes, Inc. (Enterprise Homes).

The site for the Project (the Site) is currently comprised of 12 individual lots totaling approximately one acre and is located in the 2700 block of Reisterstown Road, which is also the intersection of Reisterstown Road and Liberty Heights Avenue. The 12 lots currently consist of vacant and abandoned lots and structures that have been or are being acquired from the City's Department of Housing and Community Development (the DHCD) through its Vacants to Value program and will be conveyed through a Land Disposition Agreement (the LDA).

The Site is located directly across the street from the Mondawmin Mall and Metro Station in West Baltimore City. The area has been the focus of substantial investment encompassing a myriad of project types including residential, retail, office, institutional, and cultural. By strategically placing Metro Heights, Enterprise Homes fulfills The Greater Mondawmin Area Master Plan's goal of addressing pockets of blight by strategically placing new development in areas where they can utilize area amenities.

Metro Heights Limited Partnership (the Borrower), a newly-created "single purpose entity" that is an affiliate of Enterprise Homes will construct and operate Metro Heights. Metro Heights will be comprised of 70 units of general multifamily occupancy and consists of a mix of one-bedroom, two-bedroom, and three-bedrooms; will have 43 surface parking spaces, of which 33 spaces will be in a below grade parking garage and the remaining

DHCD – cont'd

10 spaces will be in a surface parking lot; and offer a number of on-site amenities including open space, a multi-purpose room, fitness center, and a TV lounge. Of the 70 units, 18 units will be reserved for households with incomes at or below 30% of the area median income (AMI), adjusted for family size AMI, 14 units be reserved for households with incomes at 40% or less of AMI, 20 units will be reserved for households with incomes of 50% or less of AMI, 11 units be reserved for households with incomes of 60% or less of AMI, and 7 units will not have any income restrictions. The project also will be built in conformance with LEED Silver standards, creating a healthier and more energy efficient environment for the residents.

As a condition for receiving the HOME Loan, the Borrower has agreed to provide not less than 15% of the one-bedroom units (i.e. 11 units) targeted and restricted to Non-Elderly Disabled residents (NEDs) earning 30% or less of the AMI. The Borrower has further agreed to provide an additional 7 units, of which 2 are to be one-bedroom units, 2 are to be two-bedroom units, and 3 are to be three-bedroom units, that will be targeted and restricted to individuals or families who meet the definition of "chronically homeless" as set forth by the United States Department of Housing and Urban Development (the "CH Units"). The Housing Authority of Baltimore City (HABC) intends to support the Project by providing Project-Based Section 8 subsidies for these 18 units.

Prior to leasing any of the CH Units, the Borrower will contact the Mayor's Office of Human Services (MOHS), or its designee to obtain referrals of applicants who are eligible to lease the CH Units (each, a CH Applicant and collectively, the CH Applicants). The MOHS will continue to refer CH Applicants until the Borrower leases all of the CH Units to qualified applicants. Once a CH Unit is leased by a CH Applicant, the CH Units then become designated for CH Applicants under the terms of the HAP Contract for the project.

The NEDs units will be restricted for at least 15 years in accordance with meeting the requirement of the Bailey Consent Decree. The term NEDs (or Non Elderly Person with Disabilities) means a household that meets the following criteria: (i) the sole

DHCD – cont'd

member, head of household, or head of household's spouse has a disability and is under age 62, (ii) the household is eligible for a one-bedroom public housing unit or for a two-bedroom public housing unit because a second bedroom is needed for disability-related reasons; and (iii) the household is on the HABC waiting list for public or Section 8 subsidized housing.

The HOME Loan will be used solely to finance a portion of the hard construction costs of the Project.

Novogradac & Company, prepared an appraisal for Sun Trust Bank (defined herein) dated November 18, 2016. The estimated market value of the subject property as if completed and stabilized at restricted rents with consideration to the tax credits is $5,500,000.00. The appraisal has been submitted to the Real Estate Department. The appraised value is below the total development cost of the Project which is common for transactions involving LIHTCs, subsidized rents and preferred governmental financing. The LIHTCs provide equity and are not considered as long-term debt to the property. The rents are considered restricted because they are supported with financing that requires long-term income and rent restrictions. As a result, the rent levels are set below the market rate thereby decreasing the property's appraised value. Gap financing, such as the HOME Loan and the other governmental sources are in place in order to allow for continuing affordability. The appraised value meets the underwriting standards for the must-pay permanent superior lender. The Department is comfortable with recommending the HOME Loan as described under these circumstances.

PARTICIPATING PARTIES:

A. Developer – Metro Heights Limited Partnership, a single purpose entity will act as the owner/borrower for the project. Enterprise Homes, Inc. will guarantee construction completion.

DHCD – cont'd

B. General Contractor – Harkins Builders, Inc. will act as the general contractor and post a payment and performance bond. Marks Thomas Architects will provide architectural services.

C. **Participating Lenders**
SunTrust Bank – 1st lien construction loan; 3rd lien bridge loan

SunTrust Bank, or its affiliate (SunTrust), is providing two loans during construction: a construction loan in the approximate amount of $1,825,000.00 (the First Loan) and a construction bridge loan in the approximate amount of $12,175,000.00 (the Third Loan).

The First Loan will be in first-lien position, have an interest rate equal to the 30-day LIBOR Market Index Rate plus approximately 280 basis points, and have a loan term of 24 months plus extensions. The First Loan is expected to be repaid from the proceeds of a permanent loan from Bellwether Enterprise Mortgage Investment, LLC, or its affiliate, following stabilization. The permanent loan is expected to be in an approximate amount of $1,825,000.00, accrue interest at a rate of approximately 325 basis points over the current rate on 10-year US Treasuries and will have a term of 15 years, with principal amortizing over 35 years. The permanent take-out loan will be in first mortgage lien position following execution.

The Third Loan will be in third-lien position, have an interest rate equal to the 30 day LIBOR Market Index Rate plus approximately 280 basis points, and have a term of 24 months plus extensions. Interest only payments will be required. The principal of the Third Loan is expected to be repaid from installments of tax credit equity.

DHCD – cont'd

MD CDA RENTAL HOUSING PROGRAM - 2nd lien Construction/ Permanent

The Community Development Administration (CDA), a unit of the Division of Development Finance of the Maryland Department of Housing and Community Development, will be providing a loan from its Rental Housing Program funds in an approximate amount of $2,000,000.00 (the State Loan). The State Loan will be in second-lien position. Interest on the State Loan will accrue on sums advanced at the rate of 0% during construction and an interest rate of approximately 4.0% during a 40-year permanent loan period. The Borrower will make annual payments of principal and interest out of available cash flow (in an amount required by CDA) following payment of Project expenses authorized by CDA (including superior loan payments) so as to fully amortize the principal sum by the maturity date. Any interest and principal not paid because of insufficient surplus cash will accrue and defer and be paid each subsequent payment date to the extent there is sufficient surplus cash. The State Loan will be long-term, subordinate, non-recourse debt.

CITY HOME PROGRAM — 4th lien construction/3rd lien permanent

The City is making a construction/permanent loan from amounts available under the HOME Program in the principal amount not to exceed $1,250,000.00 (the HOME Loan). The HOME Loan will be in fourth-lien position until the repayment of the Third Loan. During the construction loan period, which will be for a term not to exceed 24 months from the date of closing (the HOME Loan Construction Loan Period), interest will accrue at the rate of 0% per annum on sums advanced. The permanent loan period will be 40 years commencing at the end of the HOME Loan Construction Loan Period (the HOME Loan Permanent Loan Period), the interest rate charged will be 0% per annum. The

DHCD – cont'd

final day of the Permanent Loan Period is the HOME Loan Maturity Date. No payments on the HOME Loan will be required during construction, but during the HOME Loan Permanent Loan Period, annual payments of principal and interest will be due from 25% of the available cash flow (or as otherwise required by CDA) following payment of authorized Project expenses. To the extent such cash flow is not available, required payments due and owing be deferred. The outstanding principal balance, plus any deferred and accrued payments, will be due and payable on the HOME Loan Maturity Date. The HOME loan will be long-term, subordinate, non-recourse debt.

FHLB AHP PROGRAM – 5th lien construction/4th lien permanent

Metro Heights Limited Partnership will provide a deferred loan in the approximate amount of $500,000.00 (the AHP Loan) with proceeds of a grant from the Federal Home Loan Bank of Atlanta's Affordable Housing Program. The AHP Loan will be in the fifth-lien position until the repayment of the Third Loan. During the construction loan period of the AHP Loan, no interest will be charged on the outstanding principal balance of the AHP Loan. The Permanent loan period of the AHP Loan will be at least 40 years commencing at construction completion and during such period, interest on the AHP Loan will accrue at 8.00% simple interest per annum contingent on available cash flow.

MBE/WBE PARTICIPATION:

Article 5, Subtitle 28 of the Baltimore City Code Minority and Women's Business Program is fully applicable and no request for a waiver or exception has been made.

THE DIRECTOR OF FINANCE REVIEWED AND RECOMMENDS APPROVAL.

DHCD – cont'd

TRANSFER OF FUNDS

AMOUNT	FROM ACCOUNT/S	TO ACCOUNT/S
$1,250,000.00 Federal HOME FY 2017	9910-923006-9609 HOME FY 2017 Reserve	9910-925100-9610 Metro Heights at Mondawmin Apartments

This transfer will provide Federal HOME funds to Metro Heights Limited Partnership to support a portion of the construction and construction-related costs of Metro Heights at Mondawmin Apartments.

UPON MOTION duly made and seconded, the Board approved the HOME Investment Partnerships Program Loan in the amount of $1,250,000.00 to Metro Heights Limited Partnership. The Board further authorized the Commissioner of the Department of Housing and Community Development to execute any and all legal documents to effectuate this transaction subject to legal review and approval for form and legal sufficiency. The Transfer of Funds was approved, SUBJECT to the receipt of a favorable report from the Planning Commission, the Director of Finance having reported favorably thereon, in accordance with the provisions of the City Charter.

MINUTES

Department of Housing and Community Development – Land Disposition Agreement

ACTION REQUESTED OF B/E:

The Board is requested to approve and authorize execution of the Land Disposition Agreement with Ms. Naomi Obutu, Developer, for the sale of the City-owned properties located at 1314 Edmondson Avenue.

AMOUNT OF MONEY AND SOURCE:

$2,500.00 - Purchase price

BACKGROUND/EXPLANATION:

The project will consist of the rehabilitation of one vacant property. The project will be privately funded.

The City is authorized to dispose of the property by virtue of the provisions of Article II, Section 15 of the Charter of Baltimore City (as amended); Article 13 of the Baltimore City Code (as amended), which established the Department of Housing and Community Development; and Ordinance No. 64-234, the Harlem Park Project II Urban Renewal Plan, approved by the Mayor and City Council of Baltimore on July 6, 1960 (as amended).

STATEMENT OF PURPOSE AND RATIONALE FOR SALE BELOW THE PRICE DETERMINED BY THE WAIVER VALUATION PROCESS:

Pursuant to the Appraisal Policy of Baltimore City, the price determined by the Waiver Valuation Process for 1314 Edmondson Avenue is $4,700.00 and the property will be sold to Ms. Obutu for $2,500.00. The property will be sold below the Waiver Valuation price because of the following reasons:

- the sale will help to promote a specific benefit to the immediate community,

DHCD – cont'd

- the sale and rehabilitation will help to eliminate blight from the neighborhood, and

- the sale and rehabilitation will promote economic development through the placement of the subject property on the City's tax rolls.

MBE/WBE PARTICIPATION:

The Developer, will purchase this property for a price that is less than $50,000.00 and will receive no City funds or incentives for the purchase or rehabilitation, therefore MBE/WBE is not applicable.

UPON MOTION duly made and seconded, the Board approved and authorized execution of the Land Disposition Agreement with Ms. Naomi Obutu, Developer, for the sale of the City-owned properties located at 1314 Edmondson Avenue.

MINUTES

Mayor's Office of Human Services – Agreements

The Board is requested to approve and authorize execution of the various agreements.

AGREEMENTS

1. **NEW VISION HOUSE OF HOPE, INC. $ 28,835.56**

Account: 1001-000000-3572-772800-603051

New Vision House of Hope, Inc. will use funds to provide management and supportive services to homeless individuals formerly residing in an outdoor encampment and have been moved into temporary housing until permanent housing options can be located through the City's Coordinated Access System. The period of the agreement is March 1, 2017 through June 30, 2017.

The agreement is late because of a delay in budget negotiations with New Vision House of Hope, Inc.

2. **DANIEL GORE $ 13,200.00**

Account: 4000-407017-3574-754700-603051

Daniel Gore will provide technical assistance, help desk support, online user training, and other tasks as assigned to the Homeless Management Information Systems Unit of the Mayor's Office of Human Services. The period of the agreement is May 1, 2017 through August 31, 2017.

The agreement is late because of a delay at the administrative level.

Mayor's Office of Human Services – cont'd

APPROVED FOR FUNDS BY FINANCE

AUDITS REVIEWED AND HAD NO OBJECTION.

UPON MOTION duly made and seconded, the Board approved and authorized execution of the foregoing agreements.

OPTIONS/CONDEMNATION/QUICK-TAKES:

	Owner(s)	Property	Interest	Amount
Department of Housing and Community Development - Options				
1.	Louis Friedman, Trustee of the Marshall and Joanne Family Discretionary Trust (Under the Last Will and Testament of William S. Rief)	1327½ Myrtle Avenue	G/R $60.00	$ 550.00
	Funds are available in account no. 9910-905142-9588-900000-704040, Upton Ball Fields Project.			
2.	Turf LLC	1508 Traction Street	G/R $54.00	$ 495.00
	Funds are available in account no. 9910-908636-9588-900000-704040, Traction North Project.			
3.	Miguel DeLuna	2510 E. Biddle Street	F/S	$63,800.00
	Funds are available in account no. 9910-910634-9588-900000-704040, FY14 Whole Block Demo Project.			
4.	John L. Reese	1203 W. Lexington Street	F/S	$ 4,180.00
5.	John L. Reese	1205 W. Lexington Street	L/H	$64,200.00

OPTIONS/CONDEMNATION/QUICK-TAKES:

	Owner(s)	Property	Interest	Amount
	DHCD – Condemnations			
	Funds are available in City Bond Funds in account no. 9910-914135-9588-900000-704040, Poppleton Project.			
	In the event that the option agreement/s fail/s and settlement cannot be achieved, the Department requests the Board's approval to purchase the interest in the above property/ies by condemnation proceedings for an amount equal to or lesser than the option amount/s.			
6.	Catherine C. Collins	1500 Traction Street	L/H	$ 3,720.00
7.	James Danelle Rachon	1508 Traction Street	L/H	$ 3,340.00
	Funds are available in account no. 9910-908636-9588-900000-704040, Traction North Project.			
	DHCD – Condemnation or Redemption			
8.	Banker's Resolution Corporation	215 N. Carrollton Avenue	G/R $120.00	$ 800.00
9.	Banker's Resolution Corporation	217 N. Carrollton Avenue	G/R $120.00	$ 800.00
10.	Banker's Resolution Corporation	219 N. Carrollton Avenue	G/R $120.00	$ 800.00

MINUTES

OPTIONS/CONDEMNATION/QUICK-TAKES:

Owner(s)	Property	Interest	Amount

DHCD – Condemnation or Redemption

Funds are available in City Bond Funds in account no. 9910-914135-9588-900000-704040, Poppleton Project.

The Board is requested to approve acquisition of the ground rent interest by condemnation, or in the alternative may, SUBJECT to the prior approval of the Board, make application to the Maryland Department of Assessments and Taxation to redeem or extinguish the ground rent interest for these properties.

UPON MOTION duly made and seconded, the Board approved and authorized the foregoing Options, Condemnations, and Condemnations or Redemptions.

MINUTES

Department of Planning – Report on Previously Approved Transfers of Funds

1. At previous meetings, the Board of Estimates approved Transfers of Funds subject to receipt of favorable reports from the Planning Commission, the Director of Finance having reported favorably thereon, as required by the provisions of the City Charter. Today, the Board is requested to **NOTE 21** favorable reports by the Planning Commission on April 13, 2017, on Transfers of Funds approved by the Board of Estimates at its meetings on March 29, April 5, and April 12, 2017.

2. At previous meetings, the Board of Estimates approved Transfers of Funds subject to receipt of favorable reports from the Planning Commission, the Director of Finance having reported favorably thereon, as required by the provisions of the City Charter. Today, the Board is requested to **NOTE 13** favorable reports by the Planning Commission on May 4, 2017, on Transfers of Funds approved by the Board of Estimates at its meetings on April 26 and May 3, 2017.

The Board **NOTED 21** favorable reports on Capital Transfers of Funds approved by the Board of Estimates at the meetings on March 29, April 5, and April 12, 2017. The Board further **NOTED 13** favorable reports on Capital Transfers of Funds approved by the Board of Estimates at the meetings on April 26 and May 3, 2017.

MINUTES

Parking Authority of – Parking Facility Rate Adjustment
Baltimore City (PABC)

ACTION REQUESTED OF B/E:

The Board is requested to approve an adjustment to the monthly rate at the City-owned Franklin Street Garage that is managed by the PABC. The Parking Facility Rate Adjustment is effective upon Board approval.

AMOUNT OF MONEY AND SOURCE:

N/A

BACKGROUND/EXPLANATION:

The PABC is charged with managing the City of Baltimore's parking assets. Proper stewardship of those assets requires that the PABC realize the best possible return on the City's parking investments.

Pursuant to Article 31, §13(f)(2) of the Baltimore City Code, subject to the approval of the Board of Estimates, the PABC may set the rates for any parking project. The PABC believes that a rate adjustment at this parking facility is warranted at this time.

To bring the monthly rate charged at the Franklin Street Garage in line with its surrounding facilities, the PABC staff developed the rate adjustment recommendation submitted hereto. This rate adjustment was unanimously approved by the PABC Board of Directors.

PABC – cont'd

Location	Proposed Transient Rate Changes	Proposed Monthly Rate Changes			
Franklin Street Garage	No proposed rate adjustments	**Regular Monthly Rate**			
			Current Rate	Proposed Rate	Last Rate Change
		Regular Rate	$135.00	$140.00	February 2016

MBE/WBE PARTICIPATION:

N/A

APPROVED FOR FUNDS BY FINANCE

UPON MOTION duly made and seconded, the Board approved the adjustment to the monthly rate at the City-owned Franklin Street Garage that is managed by the PABC.

MINUTES

Parking Authority of – Parking Facility Rate Adjustment
Baltimore City (PABC)

ACTION REQUESTED OF B/E:

The Board is requested to approve an adjustment to the transient rate at the City-owned Baltimore Street Garage that is managed by the PABC. The Parking Facility Rate Adjustment is effective upon Board approval.

AMOUNT OF MONEY AND SOURCE:

N/A

BACKGROUND/EXPLANATION:

The PABC is charged with managing the City of Baltimore's parking assets. Proper stewardship of those assets requires that the PABC realize the best possible return on the City's parking investments.

Pursuant to Article 31, §13(f)(2) of the Baltimore City Code, subject to the approval of the Board of Estimates, the PABC may set the rates for any parking project. The PABC believes that a rate adjustment at this parking facility is warranted at this time.

To bring the transient rate charged at the Baltimore Street Garage in line with its surrounding facilities, the PABC staff developed the rate adjustment recommendation submitted hereto. This rate adjustment was unanimously approved by the PABC Board of Directors.

PABC – cont'd

Location	Proposed Transient Rate Changes				Proposed Monthly Rate Changes
Baltimore Street Garage	**Regular Transient Rates**				**Regular Monthly Rate**
		Current Rate	Proposed Rate	Last Rate Change	No Proposed Changes
	3 hour rate	$15.00	$16.00	August 2015	

MBE/WBE PARTICIPATION:

N/A

APPROVED FOR FUNDS BY FINANCE

UPON MOTION duly made and seconded, the Board approved and authorized an adjustment to the transient rate at the City-owned Baltimore Street Garage that is managed by the PABC.

MINUTES

Parking Authority of – Maintenance Agreement
Baltimore City (PABC)

ACTION REQUESTED OF B/E:

The Board is requested to approve and authorize execution of a Maintenance Agreement with CALE America, Inc. (CALE). The period of the Maintenance Agreement is June 1, 2017 through May 31, 2020.

AMOUNT OF MONEY AND SOURCE:

$256,032.00 – 2076-000000-2321-252800-607001
(with Consumer Price Index adjustments in years two and three; any increase will require additional Board of Estimates approval)

BACKGROUND/EXPLANATION:

On July 19, 2006, the Board approved the Agreement for Pay-and-Display Parking Stations with CALE Parking Systems USA, Inc. The Board approved amendments on October 17, 2007, July 30, 2008, April 8, 2009, February 17, 2010, August 25, 2010, April 25, 2012, October 3, 2012, and July 23, 2014.

On February 15, 2012, the Board approved the assignment of the Agreement for Pay and Display Parking Station and the Meter Maintenance Agreement from CALE Parking Systems USA, Inc. to CALE America, Inc. The Agreement for Pay-and-Display Parking Stations allowed the City, through the Parking Authority, to purchase and install 887 multi-space meters (EZ Park Meters) throughout the City. The benefits associated with these meters have been recognized by the City's agencies, citizens, businesses, and visitors.

On May 26, 2010, the Board approved the current meter maintenance agreement. On February 5, 2014, the Board approved the amendment to agreement, which had an initial term of 5 years through May 31, 2015. The current meter maintenance agreement allowed the PABC to extend the term of the agreement for two l-year periods by providing notice to CALE and obtaining approval from the Board. The PABC, with the Board approval, exercised both extensions through May 30, 2017.

PABC – cont'd

The Maintenance Agreement now before the Board, will ensure continued success of the EZ Park program by requiring regular preventive maintenance on EZ Park meters, tracking repair alarms/complaints, and requiring response times by CALE technicians when meters require repairs. Maintenance will be performed by the manufacturer and distributor of the equipment.

CALE meters are meeting expectations and the PABC believes that this Meter Maintenance Agreement is in the best interest of the City. As a result of the EZ Park meter program, annual parking meter revenues have increased by $3,500,000.00.

Therefore, the PABC respectfully requests the approval of this Maintenance Agreement.

MWBOO GRANTED A WAIVER.

APPROVED FOR FUNDS BY FINANCE

AUDITS REVIEWED AND HAD NO OBJECTION.

UPON MOTION duly made and seconded, the Board approved and authorized execution of the Maintenance Agreement with CALE America, Inc.

MINUTES

TRANSFERS OF FUNDS

* * * * * *

UPON MOTION duly made and seconded,

the Board approved

the Transfers of Funds

listed on the following pages:

1757 - 1758

SUBJECT to receipt of favorable reports

from the Planning Commission,

the Director of Finance having

reported favorably thereon,

as required by the provisions of the

City Charter.

MINUTES

TRANSFERS OF FUNDS

	AMOUNT	FROM ACCOUNT/S	TO ACCOUNT/S
Department of Transportation			
1.	**$ 15,000.00** State Const. Rev.	9950-916073-9509 Construction Reserve-Concrete Roadway Slab Repairs	9950-905559-9508 Concrete Slab Repairs Citywide III

This transfer will cover the costs of prints and preliminary expenses and other related costs necessary to advertise project TR 17009 Concrete Slab Repairs Citywide III.

2.	**$ 15,000.00** General Funds (HUR)	9950-916029-9509 Construction Reserve-Materials & Compliance Testing	9950-903497-9508 Utility Locating Test Holes & Borings

This transfer will cover the costs of prints and preliminary expenses and other related costs necessary to advertise project TR 17020 Utility Locating Test Holes & Borings for Engineering Projects.

Department of Housing and Community Development			
3.	**$4,000,000.00** 1st Community & Economic Development Bonds	9910-922012-9587 Whole Block Demolition Reserve	9910-909128-9588 Whole Block Demolition FY17

This transfer will provide funds to support the Citywide Whole Block Demolition Program.

TRANSFERS OF FUNDS

	AMOUNT	FROM ACCOUNT/S	TO ACCOUNT/S
Department of Planning			
4.	**$100,000.00** Other Fund Revenue	9905-924004-9186 Critical Area Buffer Offset Program (Reserve)	9905-922004-9188 Critical Area Buffer Offset Program (Active)
	$120,000.00 Other Fund Revenue	9905-928005-9186 Critical Area Stormwater Offset Program (Reserve)	9905-926005-9188 Critical Area Stormwater Offset Program (Active)

This transfer will provide appropriations to support and improve water quality, restore habitat and provide environmental education through restoration projects. It will also support administration of the critical area program.

MINUTES

Mayor's Office of Employment Development (MOED) – Agreements and Amendments to Agreements

The Board is requested to approve and authorize execution of the various Agreements and Amendments to Agreements.

AGREEMENT

1. **JOB OPPORTUNITIES TASK FORCE, INC. (JOTF)** **$ 93,895.00**

   Account: 4000-809917-6312-726805-603051

   The JOTF will provide highway or capital transit credentialed transportation construction-related training with a defined curriculum designed for hard-to-serve, low-skill, unemployed, or underemployed Baltimore City residents. The JOTF will recruit, screen, and enroll 15 Baltimore City residents, conduct a 15 week project-based transportation construction-related occupational skills training program, provide job readiness, comprehensive case management, employment, and retention services.

   The funds will be drawn from Federal funding received through the Maryland Department of Labor Licensing and Regulation. The period of the Agreement is March 1, 2017 through September 30, 2017.

   This agreement is late because additional time was required in reaching a comprehensive understanding.

   MBE/WBE PARTICIPATION:

   N/A – This is a professional service agreement.

MOED – cont'd

INTERGOVERNMENTAL AGREEMENT

2. **MARYLAND STATE DEPARTMENT OF HUMAN RESOURCES/BALTIMORE CITY DEPARTMENT OF SOCIAL SERVICES (DHR/BCDSS)** **$11,938,939.00**

Account: 4000-808217-6392-456000-404001

This Inter-Governmental Agreement will provide support services to enrolled Temporary Cash Assistance (TCA) applicants and recipients who will actively participate in work preparation programs and services leading to full-time unsubsidized employment. The period of agreement is July 1, 2016 through June 30, 2018, with a renewal option of two years, at sole discretion of the DHR/BCDSS.

The amount of this Inter-Governmental Agreement will not exceed: for the base of this contract period covering July 1, 2016 through June 30, 2018, $5,825,025.00, with one-two year option period covering July 1, 2018 through June 30, 2020 not to exceed $6,113,964.00. The total contract dollar amount will not exceed, $11,938,989.00 of Federal funds.

The Agreement is late because the required information by the vendor that was needed to be completed before submission to the Board.

AUDITS REVIEWED AND HAD NO OBJECTION.

AMENDMENTS TO AGREEMENTS

3. **ASSOCIATED CATHOLIC CHARITIES, INC.** **$0.00**

Account: 4000-807416-6312-781105-603051

On October 28, 2015, the Board approved the original agreement which terminated on April 30, 2017. This first amendment will

MOED – cont'd

extend the term of the agreement from November 1, 2015 through October 31, 2017.

4. **JANE ADDAMS RESOURCES CORPORATION** **$0.00**

Account: 4000-807416-6312-781305-603051

On February 10, 2016, the Board approved the original agreement which terminated on April 30, 2017. This first amendment will extend the term of the agreement from November 1, 2015 through October 31, 2017.

5. **NEW PATHWAYS, INC.** **$0.00**

Account: 4000-807416-6312-781505-603051

On December 23, 2015, the Board approved the original agreement which terminated on April 30, 2017. This first amendment will extend the term of the agreement from November 1, 2015 through June 30, 2017.

6. **STRONG CITY BALTIMORE, INC.** **$0.00**

Account: 4000-807416-6312-790305-603051

On November 2, 2016 the Board approved the original agreement which terminated on April 30, 2017. This first amendment will extend the term of the agreement from July 1, 2016 through October 31, 2017.

MOED – cont'd

The above-listed organizations (item no. 3-6) provides training programs with defined curricula that are designed for hard-to-serve, low-skill, underemployed or unemployed Baltimore residents with a focus on individuals between ages 16 to 29 years old. The total obligation level of the agreements will not exceed $250,000.00. All other terms and conditions of the agreement will remain unchanged.

APPROVED FOR FUNDS BY FINANCE.

AUDITS NOTED THE NO-COST TIME EXTENSION.

UPON MOTION duly made and seconded, the Board approved and authorized execution of the foregoing Agreements and Amendments to Agreements.

MINUTES

Mayor's Office of Employment – First Amendment to Agreement
Development (MOED)

ACTION REQUESTED OF B/E:

The Board is requested to approve and authorize execution of the First Amendment to Agreement with Towson University. The First Amendment extends the Agreement through June 30, 2018.

AMOUNT OF MONEY AND SOURCE:

$ 18,700.00 - FY17
$104,200.00 - FY18

Accounts: 4000-807517-6312-467253-603051
4000-806517-6312-467253-603051
4000-807115-6312-467253-603051
5000-535916-6311-454200-603051
2026-000000-6311-734100-603051

BACKGROUND/EXPLANATION:

On September 28, 2016, the Board approved the original agreement in the amount of $85,000.00. Under the agreement, Towson University provides training in those areas specified on the Maryland Higher Education Commission list of approved training providers.

The purpose of this amendment is to increase the funding by $18,700.00 for the period July 1, 2016 through June 30, 2017, from $85,500.00 to $104,200.00. This amendment also includes an extension of 12 months through June 30, 2018 and an additional increase of $104,200.00 to support the upcoming fiscal year July 1, 2017 through June 30, 2018.

The total obligation level of agreement will not exceed $208,400.00. The source of funding remains the same (Federal Funds and Casino Support Funds) and the amounts drawn from those accounts cannot be determined until the participants are registered.

MOED – cont'd

MBE/WBE PARTICIPATION:

N/A

APPROVED FOR FUNDS BY FINANCE

AUDITS REVIEWED AND HAD NO OBJECTION.

UPON MOTION duly made and seconded, the Board approved and authorized execution of the First Amendment to Agreement with Towson University.

MINUTES

Mayor's Office of Employment – First Amendment to Agreement
Development (MOED)

ACTION REQUESTED OF B/E:

The Board is requested to approve and authorize execution of the First Amendment to Agreement with BIO Technical Institute of Maryland, Inc. The First Amendment extends the Agreement through June 30, 2018.

AMOUNT OF MONEY AND SOURCE:

$98,628.00 - 4000-807416-6312-670505-603051

BACKGROUND/EXPLANATION:

On October 28, 2015, the Board approved the original agreement in the amount of $232,288.00. The agreement authorizes Bio Technical Institute of Maryland, Inc. to provide BIO Start and Lab Associates training with a defined curriculum designed for hard-to-serve, low-skilled, unemployed or underemployed Baltimore City residents.

The purpose of this amendment is to extend the period of the agreement from November 1, 2015 through April 30, 2017 to November 1, 2015 through October 31, 2017, increase the number of enrollees by 16, from 30 to 46 City residents, and to increase the amount of the original agreement by $98,628.00. The total obligation level of agreement will not exceed $330,916.00. All other terms and conditions of agreement will remain unchanged.

APPROVED FOR FUNDS BY FINANCE

AUDITS REVIEWED AND HAD NO OBJECTION.

MOED – cont'd

UPON MOTION duly made and seconded, the Board approved and authorized execution of the First Amendment to Agreement with BIO Technical Institute of Maryland, Inc.

MINUTES

Mayor's Office of Employment – Second Amendment to Agreement
Development (MOED)

ACTION REQUESTED OF B/E:

The Board is requested to approve and authorize execution of the Second Amendment to Customized Training (Second Amendment to Agreement) with Johns Hopkins Health System Corporation (JHHS). The Second Amendment extends the Agreement through December 31, 2018.

AMOUNT OF MONEY AND SOURCE:

($1,785.80) – Slots reduced from 10 to 9

Account: 4000-807516-6312-773605-603051

BACKGROUND/EXPLANATION:

On April 27, 2016, the Board approved the original agreement with the JHHS, for the period March 7, 2016 through August 31, 2016. Under the agreement, the JHHS is authorized to provide Pharmacy Technician training for 14 eligible residents of Baltimore City. The obligation for this agreement was $43,475.60.

On October 5, 2016, the Board approved a ratification of an amendment to decrease the number of enrollees by four, from 14 to 10 Baltimore City residents and to decrease the amount of the agreement in the not to exceed amount $34,054.40.

The purpose of this Second Amendment to Agreement is to extend the agreement term from March 7, 2016 to December 31, 2017 and reduce

MOED – cont'd

the number of slots from 10 to 9, which reduces the total contract amount from $34,054.40 to $32,268.60, and increases the participant wage per hours from $13.46 to $14.21 per hour. All other terms and conditions of the agreement will remain unchanged.

MBE/WBE PARTICIPATION:

N/A

APPROVED FOR FUNDS BY FINANCE

AUDITS REVIEWED AND HAD NO OBJECTION.

UPON MOTION duly made and seconded, the Board approved and authorized execution of the Second Amendment to Customized Training Agreement with Johns Hopkins Health System Corporation.

MINUTES

Health Department – Agreements, Amendment to Agreement and Ratification of an Agreement

The Board is requested to approve and authorize execution of the Agreements, Amendment to Agreement and ratify an Agreement.

AGREEMENTS

1. **ASSOCIATED BLACK CHARITIES, INC.** **$ 590,170.00**

Accounts: 4000-498717-3023-606101-603051 $ 32,787.00
4000-498717-3023-606102-603051 $ 557,383.00

The organization, as the Fiscal Agent for Minority AIDS Initiative (MAI) will be responsible for providing the day-to-day fiscal administration, contracting and monitoring of provider expenditures to ensure the reasonableness of reimbursements requested by direct services providers and to be in compliance with contractual fiscal requirements. During this term, the Department will be responsible for the programmatic services of Ryan White Part A, including the request for proposals, selection of direct service providers, review of programmatic reports, and programmatic monitoring of providers. The purpose of the Ryan White Part A MAI program is to improve HIV-related health outcomes to reduce existing racial and ethnic health disparities. The period of the Agreement is March 1, 2017 through February 28, 2018.

2. **ASSOCIATED BLACK CHARITIES, INC.** **$6,252,765.00**

Accounts: 4000-427717-3023-273302-603051 $ 301,272.00
4000-427717-3023-273303-603051 $5,951,493.00

The organization, as the Fiscal Agent will be responsible for providing the day-to-day fiscal administration, contracting and monitoring of provider expenditures to ensure the reasonableness of reimbursement requested by direct service providers and to be in compliance with contractual fiscal

Health Department – cont'd

requirements. During this term, the Department will be responsible for the programmatic services of Ryan White Part A, including the request for proposal, selection of direct service providers, review of programmatic reports, and programmatic monitoring of providers. The period of the Agreement is March 1, 2017 through February 28, 2018.

The Agreements are late because of the Subgrantee, budgets were being prepared.

3. **KENNEDY KRIEGER INSTITUTE, INC. $66,493.00**

Accounts: 4000-427117-3080-294300-603051 $53,204.00
4000-428217-3080-294300-603051 $13,289.00

The organization will coordinate family support services with the Baltimore Infants and Toddlers Program. These services will include early intervention and coordination of services to infants and toddlers and their families in the Hispanic/Latino and Orthodox Jewish communities. The period of the Agreement is July 1, 2016 through June 30, 2017.

The Agreement is late because review and approval of budgets delayed the processing.

4. **THE JOHNS HOPKINS UNIVERSITY $98,790.00**

Account: 5000-569717-3023-274406-603051

The organization's HIV Women's Health Program provides community-based, culturally sensitive, coordinated, and flexible care for women HIV-infected women. Women who are HIV-infected and become pregnant and choose to continue their pregnancy are followed for on-going antenatal, intrapartum, and post-partum care in the Obstetrical clinic and inpatient Labor and Delivery suite. HIV medical care is provided by board-certified obstetricians in maternal fetal medicine as

Health Department – cont'd

part of a multidisciplinary team that also includes nursing, social work, medical case management and non-medical case management (NMCM). The NMCM focuses on adherence to appointments and HIV treatment during pregnancy including initial assessment and care plans reflecting the psychological needs and potential barriers to care. The period of the Agreement is July 1, 2016 through June 30, 2017.

The Agreement is late due to the administrative review process.

MWBOO GRANTED A WAIVER.

AMENDMENT TO AGREEMENT

5. **ROSEMARIE MANOR, LLC ($6,590.00)**

Account: 5000-534017-3254-767804-607001

On October 5, 2016, the Board approved an agreement in the amount of $163,800.00 for the period of July 1, 2015 through June 30, 2017. This amendment will decrease the funding amount by ($6,590.00) making the new total $157,210.00.

The organization is enrolled in the Senior Assisted Living Group Home Subsidy Program and provides subsidized senior assisted housing services for individuals age 62 and over, who have temporary or periodic difficulties with the activities in daily living. The Senior Assisted Housing residents receive shelter, meals, housekeeping, personal care services, and 24-hour on-site supervision.

MWBOO GRANTED A WAIVER.

Health Department – cont'd

RATIFICATION OF AGREEMENT

6. **THE JOHNS HOPKINS UNIVERSITY $2,457.00**

Account: 5000-569716-3023-274452-603051

The organization's HIV Women's Health Program provided comprehensive health services to HIV-infected women during pregnancy to minimize the risk of mother to child transmission of HIV to the infant with antiretroviral therapy while maintaining optimal health outcomes for the mother during and after pregnancy.

This ratification is needed to allow the Department to reimburse the organization for services it provided in fiscal year 2016. The period of the agreement was July 1, 2015 through July 31, 2015.

The agreement is late because the request was not processed.

APPROVED FOR FUNDS BY FINANCE

AUDITS REVIEWED AND HAD NO OBJECTION.

UPON MOTION duly made and seconded, the Board approved and authorized execution of the foregoing Agreements, Amendment to Agreement and ratified the Agreement with The Johns Hopkins University. The Comptroller **ABSTAINED** on item nos. 1 and 2.

MINUTES

Department of Public Works/ – Expenditure to Pay Agreement
Office of Engineering and
Construction

ACTION REQUESTED OF B/E:

The Board is requested to approve and authorize payment to CSX Transportation, Inc. (CSX) for utility application review for Sanitary Contract No. 940 – Wastewater Engineering Service for Sewer Capacity for Improvements in the Upper Gwynns Falls Area of the High Level Sewershed.

AMOUNT OF MONEY AND SOURCE:

$4,000.00 – 9956-906647-9551-900020-703040

BACKGROUND/EXPLANATION:

The scope of work under SC 940 involves installing a new 42-inch gravity pipe inside a 60 inch steel casing in a CSX right-of-way crossing. In order to get the right-of-way from CSX, their approval on the design drawings is needed. Once the application fee is paid, CSX will review the design drawings and provide comments and then approve the work that needs to be done in their right-of-way.

The project's scope of work includes replacement of 12" to 30" sanitary sewers by open cut method; new installation of sanitary sewer manholes; design of 42" relief sewer with 60" casing pipe by tunneling; and restoration of pavement, alleys, sidewalks and site restoration, including planting trees.

MBE/WBE PARTICIPATION:

N/A

APPROVED FOR FUNDS BY FINANCE

AUDITS REVIEWED AND HAD NO OBJECTION.

Department of Public Works/ – cont'd
Office of Engineering and
Construction

UPON MOTION duly made and seconded, the Board approved and authorized payment to CSX Transportation, Inc. for utility application review for Sanitary Contract No. 940 – Wastewater Engineering Service for Sewer Capacity for Improvements in the Upper Gwynns Falls Area of the High Level Sewershed.

MINUTES

Department of Public Works/Office of Engineering and Construction – Partial Release of Retainage Agreement

ACTION REQUESTED OF B/E:

The Board is requested to approve and authorize execution of an agreement for the Partial Release of Retainage to SAK Construction for Sanitary Contract No. 906 – Improvement to Sanitary Sewers in the West Baltimore Region of the High Level Sewershed.

AMOUNT OF MONEY AND SOURCE:

$639,179.50 – 9956-905620-9551-000000-200001

BACKGROUND/EXPLANATION:

As of July 1, 2016, SAK Construction has completed 100% of all work for SC 906. The Contractor has requested a Partial Release of Retainage. Currently, the City is holding $913,863.50 retainage for the referenced project and the contractor is requesting to reduce the amount of Retainage to $274,684.00. The remaining $274,684.00 is sufficient to protect the interest of the City.

MWBOO GRANTED A WAIVER.

APPROVED FOR FUNDS BY FINANCE

AUDITS REVIEWED AND HAD NO OBJECTION.

Department of Public Works/Office – cont'd
of Engineering and Construction

UPON MOTION duly made and seconded, the Board approved and authorized execution of the agreement for the Partial Release of Retainage to SAK Construction for Sanitary Contract No. 906 – Improvement to Sanitary Sewers in the West Baltimore Region of the High Level Sewershed.

MINUTES

INFORMAL AWARDS, RENEWALS, INCREASES TO CONTRACTS AND EXTENSIONS

VENDOR	AMOUNT OF AWARD	AWARD BASIS

Bureau of Purchases

1. GARTNER, INC. $124,700.00 Renewal

Contract No. 08000 – Gartner for IT Executives and Leaders Agreement – Mayor's Office of Information Technology – P.O. No. P528566

On August 14, 2013, the Board approved the initial award in the amount of $33,800.00. The award contained one-year renewal options at the sole discretion of the City. Three renewal options have been exercised. This fourth renewal is necessary for the continuation of access to Gartner's unique research database which will enhance the Mayor's Office of Information Technology in areas including enterprise architecture, applications, network security, and risk management for key initiative that will improve stability and further advance the City's network infrastructure. This fourth renewal is for the period August 1, 2017 through July 31, 2018, with one-year renewals at the sole discretion of the City.

MBE/WBE PARTICIPATION:

Not applicable. This meets the requirement for certification as a sole source procurement. The proprietary database library is only available from the vendor and is not available from subcontractors.

2. ABBOTT INFORMATICS CORPORATION $ 7,193.00 Renewal

Contract No. 06000 – STAR Laboratory Information Management System (STARLIMS) – Department of Health – P.O. No. P535998

On June 29, 2016, the Board approved the initial award in the amount of $210,207.52. The award contained four 1-year renewal options. This first renewal is for the period June 29, 2017 through June 28, 2018, with three 1-year renewal options remaining.

INFORMAL AWARDS, RENEWALS, INCREASES TO CONTRACTS AND EXTENSIONS

VENDOR	AMOUNT OF AWARD	AWARD BASIS

Bureau of Purchases

It is hereby certified, that the above procurement is of such a nature that no advantage will result in seeking nor would it be practical to obtain competitive bids. Therefore, pursuant to Article VI, Section 11 (e)(i) of the City Charter, the procurement of the equipment and/or service is recommended.

MBE/WBE PARTICIPATION:

Not applicable. This meets the requirement for certification as selected source procurement. This proprietary software is only available from the vendor and is not available from subcontractors.

3. DEMOUSA, INC. $100,000.00 Renewal

Contract No. B50004582 – Services for Debris Cleanup in Middle Branch, Canton and Fells Point – Department of Public Works – Bureau of Solid Waste – P.O. No. P535768

On June 8, 2016, the Board approved the initial award in the amount of $164,103.00. The award contained four 1-year renewal options. This first renewal is for the period June 8, 2017 through June 7, 2018, with three 1-year renewal options remaining. The above amount is the City's estimated requirement.

MBE/WBE PARTICIPATION:

On March 29, 2016, it was determined that no goals would be set because of no opportunity to segment the contract.

4. HOMESERVE USA, CORPORATION $ 0.00 Renewal

Contract No. B50003190 - Residential Water and Sewer Service Line Protection Program – Department of Public Works – P.O. No. P527649

INFORMAL AWARDS, RENEWALS, INCREASES TO CONTRACTS AND EXTENSIONS

VENDOR	AMOUNT OF AWARD	AWARD BASIS

Bureau of Purchases

On May 28, 2014, the Board approved the initial award in the amount of $0.00. The award contained three 1-year renewal options. On May 18, 2016, the Board approved the first renewal in the amount of $0.00.

The vendor provides Residential Water and Sewer Service Line Protection at a fee to City residents for repairs on resident's property to the City's point of responsibility. This second renewal in the amount of $0.00 is for the period May 28, 2017, through May 27, 2018, with one 1-year renewal option remaining.

MBE/WBE PARTICIPATION:

On November 4, 2013, it was determined that no goals would be set because of no opportunity to segment the contract.

MWBOO GRANTED A WAIVER.

5. WASHINGTON HOSPITAL CENTER CORPORATION $250,000.00 Renewal

Contract No. 06000 – Non-Emergent Medical Air Transportation Services – Baltimore City Health Department – P.O. No. P532159

On July 11, 2012, the Board approved the initial award in the amount of $250,000.00. The award contained four renewal options. Subsequent actions have been approved and three renewal options have been exercised.

Non-Emergent Medical Air Transportation services for critical care patients are provided by the Maryland Department of Health and Mental Hygiene (DHMH) through the Transportation

INFORMAL AWARDS, RENEWALS, INCREASES TO CONTRACTS AND EXTENSIONS

VENDOR	AMOUNT OF AWARD	AWARD BASIS

Bureau of Purchases

Grants Program. The DHMH protocol states "All Air transport costs for Maryland Medicaid Recipient will be paid by the Baltimore City Health Department," through the Transportation Grants Program. Service providers may submit invoices as late as two years after services have been rendered prior to the review and verification process, which takes approximately one year.

The State of Maryland must license all air ambulance service companies. The company named above is licensed by the State of Maryland. The DHMH protocol further states, "This unit City Health Department) will screen all calls as to eligibility and medical necessity and the appropriate transportation will be arranged when approved." This final renewal is for the period July 11, 2017 through July 10, 2018. The above amount is the City's estimated requirement.

MBE/WBE PARTICIPATION:

Not applicable. This meets the requirement for certification as selected source procurement. These services are only available from the vendor and are not available from subcontractors.

6. CROWLEY MICROGRAPHICS
d/b/a THE CROWLEY COMPANY $ 0.00 Extension
Contract No. B50004117 – Conversion of Microfilm & Microfiche to Digital Format – Department of Housing and Community Development – P.O. No. P533588

On December 16, 2015, the Board approved the initial award in the amount of $209,661.00. An increase and extension was

INFORMAL AWARDS, RENEWALS, INCREASES TO CONTRACTS AND EXTENSIONS

VENDOR	AMOUNT OF AWARD	AWARD BASIS

Bureau of Purchases

approved by the Board on December 7, 2016. This extension is necessary to allow for additional time to complete the conversion of microfilm and microfiche images into a digital format. The extension is for the period July 1, 2017 through August 31, 2017. The above amount is the City's estimated requirement.

MBE/WBE PARTICIPATION:

MWBOO set goals of 0% MBE and 7% WBE.

	Commitment	Performed	
MBE: 1st Choice, LLC	7%	$14,571.57	10.6%

MWBOO FOUND VENDOR IN COMPLIANCE.

7. MARYLAND SMALL ARMS RANGE, INC. $28,437.50 Low Bid

Solicitation No. B50004977 – Duty Belt Equipment – Sheriff's Department – Req. No. R758850

Vendors were solicited by posting on CitiBuy. The nine bids received were opened on April 25, 2017. The first through fifth lowest bidders did not bid all items and were found non-responsive. Award is recommended to be made to the sixth lowest responsive and responsible bidder. The period of the award is effective upon Board approval for two years. The above amount is the City's estimated requirement.

INFORMAL AWARDS, RENEWALS, INCREASES TO CONTRACTS AND EXTENSIONS

VENDOR	AMOUNT OF AWARD	AWARD BASIS

Bureau of Purchases

8. JANI-KING OF BALTIMORE $ 30,655.00 Ratification
Contract No. B50001751 – Janitorial Services for Area D – Department of General Services – Req. No. P518313

On July 13, 2011, the Board approved the initial award in the amount of $0.00. The award contained two renewal options. Subsequent actions have been approved and both renewals have been exercised. A ratification is being requested as additional funds are required to make a final payment under the contract which expired on December 31, 2016. A new contract has been awarded. The period of the ratification is October 16, 2016 through October 31, 2016.

It is hereby certified, that the above procurement is of such a nature that no advantage will result in seeking nor would it be practical to obtain competitive bids. Therefore, pursuant to Article VI, Section 11 (e)(i) of the City Charter, the procurement of the equipment and/or service is recommended.

UPON MOTION duly made and seconded, the Board approved the informal awards, renewals, increases to contracts, and extensions.

MINUTES

Department of Transportation – Memorandum of Understanding

ACTION REQUESTED OF B/E:

The Board is requested to approve and authorize execution of the Memorandum of Understanding (MOU) with Southeast Community Development Corporation. The period of the MOU is effective upon Board approval for a period of ten years, with an option to renew for an additional ten years.

AMOUNT OF MONEY AND SOURCE:

No funds are required.

BACKGROUND/EXPLANATION:

The purpose of this MOU establishes the framework for the owner to install sculpture art in the existing fenced area on the sidewalk adjacent to 3601 Eastern Avenue.

Subsequently for the owner to perform ongoing maintenance of all aspects of the Project during the term of the Agreement, all such work, and maintenance is at the cost of the owner.

MBE/WBE PARTICIPATION

N/A

UPON MOTION duly made and seconded, the Board approved and authorized execution of the Memorandum of Understanding with Southeast Community Development Corporation.

MINUTES

Department of Transportation – Memorandum of Understanding

ACTION REQUESTED OF B/E:

The Board is requested to approve and authorize execution of the Memorandum of Understanding (MOU) with Balti-West, 300 LLC (Owner) in connection with the maintenance of landscaping and hardscaping at 325 W. Baltimore Street. The period of the MOU is effective upon Board approval for a ten-year period with an additional renewal period of ten years unless terminated earlier in accordance with this Agreement.

AMOUNT OF MONEY AND SOURCE:

No funds are required.

BACKGROUND/EXPLANATION:

The MOU establishes the framework for the Owner to maintain landscaping and hardscaping at 325 W. Baltimore Street.

The owner will perform ongoing maintenance of all aspects of the Project during the term of the Agreement, all such work and maintenance is at the cost of the owner.

MBE/WBE PARTICIPATION

N/A

UPON MOTION duly made and seconded, the Board approved and authorized execution of the Memorandum of Understanding with Balti-West, 300 LLC in connection with the maintenance of landscaping and hardscaping at 325 W. Baltimore Street.

MINUTES

Department of Transportation - Developer's Agreement No. 1503

ACTION REQUESTED OF B/E:

The Board is requested to approve and authorize execution of Developer's Agreement No. 1503 with FRP Hollander 95, LLC developer.

AMOUNT OF MONEY AND SOURCE:

$30,000.00

BACKGROUND/EXPLANATION:

FRP Hollander 95, LLC would like to install new utilities to their proposed new building located in the vicinity of 1901 and 1921 62nd Street. This agreement will allow the organization to do its own installation in accordance with Baltimore City Standards.

An Irrevocable Letter of Credit in the amount of $30,000.00 has been issued to FRP Hollander 95, LLC which assumes 100% of the financial responsibility.

MBE/WBE PARTICIPATION:

City funds will not be utilized for this project, therefore, MBE/WBE participation is not applicable.

UPON MOTION duly made and seconded, the Board approved and authorized execution of the Developer's Agreement No. 1503 with FRP Hollander 95, LLC developer.

MINUTES

Department of Transportation – Task Assignment

ACTION REQUESTED OF B/E:

The Board is requested to approve the assignment of Task No. 10 to KCI/STV Joint Venture, under Project No. 1190, On-Call Consultant Engineering Design, Review and Evaluation Services-Conduit. The period of Task No. 10 is approximately 7.5 months.

AMOUNT OF MONEY AND SOURCE:

$477,459.02 – 9962-904056-9562-900000-703032

BACKGROUND/EXPLANATION:

This authorization provides for engineering services, which allows for editing the Department's Conduit Geodatabase and providing Geographic Information System (GIS) support. The geodatabase is used to track the Department's conduit assets as well as its users. Services include, but are not limited to attending meetings, assisting staff with complex GIS editing, review and process field inspection records, and performing GIS technical updates to maintain the accuracy of the conduit geodatabase.

MBE/WBE PARTICIPATION:

The Consultant will comply with Article 5, Subtitle 28 of the Baltimore City Code and the MBE and WBE goals established in the original agreement.

MBE: 27%

WBE: 10%

AUDITS REVIEWED AND FOUND THE BASIS FOR COMPENSATION CONSISTENT WITH CITY POLICY.

Department of Transportation – cont'd

TRANSFER OF FUNDS

AMOUNT	FROM ACCOUNT/S	TO ACCOUNT/S
$477,459.02	9962-903521-9563 Constr. Res. - Conduit Manhole Reconstr.	9962-904056-9562-3 Design Conduit Occupancy Survey

This transfer will provide funds to cover the costs associated with Task No. 10 Project No. 1190, On-Call Consultant Engineering Design, Review and Evaluation Services-Conduit with KCI/STV Joint Venture.

UPON MOTION duly made and seconded, the Board approved the assignment of Task No. 10 to KCI/STV Joint Venture, under Project No. 1190, On-Call Consultant Engineering Design, Review, and Evaluation Services-Conduit. The Transfer of Funds was approved, SUBJECT to the receipt of a favorable report from the Planning Commission, the Director of Finance having reported favorably thereon, in accordance with the provisions of the City Charter.

MINUTES

Department of Transportation – Task Assignment

ACTION REQUESTED OF B/E:

The Board is requested to approve the assignment of Task No. 09 to KCI/STV Joint Venture, under Project No. 1190, On-Call Consultant Engineering Design, Review and Evaluation Services-Conduit. The period of Task No. 09 is approximately one year.

AMOUNT OF MONEY AND SOURCE:

$1,053,024.39 – 9962-904056-9562-900000-703032

BACKGROUND/EXPLANATION:

This authorization provides for continued inventory of conduit manhole occupancy and condition inspection necessary to maintain the existing conduit manager program, identify unknown cable owners by tracking cable routes, and determining manhole structural adequacy.

MBE/WBE PARTICIPATION:

The Consultant will comply with Article 5, Subtitle 28 of the Baltimore City Code and the MBE and WBE goals established in the original agreement.

MBE: 27%

WBE: 10%

AUDITS REVIEWED AND FOUND THE BASIS FOR COMPENSATION CONSISTENT WITH CITY POLICY.

Department of Transportation – cont'd

TRANSFER OF FUNDS

AMOUNT	FROM ACCOUNT/S	TO ACCOUNT/S
$ 556,231.05 Other	9962-903521-9563 Constr. Res. - Conduit Manhole Reconstr.	
496,793.34 Other	9962-941002-9563 Conduit Replacement Program	
$1,053,024.39	----------	9962-904056-9562-3 Design Conduit Occupancy Survey

This transfer will provide funds to cover the costs associated with Task No. 9 Project No. 1190, On-Call Consultant Engineering Design, Review and Evaluation Services-Conduit with KCI/STV Joint Venture.

UPON MOTION duly made and seconded, the Board approved the assignment of Task No. 09 to KCI/STV Joint Venture, under Project No. 1190, On-Call Consultant Engineering Design, Review and Evaluation Services-Conduit. The Transfer of Funds was approved, SUBJECT to the receipt of a favorable report from the Planning Commission, the Director of Finance having reported favorably thereon, in accordance with the provisions of the City Charter.

MINUTES

Department of Transportation – Task Assignment

ACTION REQUESTED OF B/E:

The Board is requested to approve the assignment of Task No. 07 to Prime AE Group, Inc./Hardesty & Hanover, LLC (Joint Venture), under Project No. 1175, On-Call Bridge Design Services. The period of Task No. 7 is approximately 30 months.

AMOUNT OF MONEY AND SOURCE:

$636,998.96 – 9960-906629-9557-900000-703032

BACKGROUND/EXPLANATION:

This authorization provides for the recommendation and design of a full bridge replacement for the existing Phoenix Rd. Bridge over Gunpowder Falls located north of the Loch Raven Reservoir in the Phoenix area of Baltimore County. This task includes the estimated scope and fee to capture out-of-scope work which was identified during the type, size, and location phase of the project, and to identify scope and fee to take the project to advertisement.

MBE/WBE PARTICIPATION:

The Consultant will comply with Article 5, Subtitle 28 of the Baltimore City Code and the MBE and WBE goals established in the original agreement.

MBE: 27%

WBE: 10%

AUDITS REVIEWED AND FOUND THE BASIS FOR COMPENSATION CONSISTENT WITH CITY POLICY.

MINUTES

Department of Public Works/Office of Engineering and Construction

TRANSFER OF FUNDS

AMOUNT	FROM ACCOUNT/S	TO ACCOUNT/S
$445,446.75 (Revenue Bonds)	9960-902070-9558 (Constr. Res.) Watershed Road & Bridge Repairs	
304,553.25 Counties		
$750,000.00		
$636,998.96	----------	9960-906629-9557-3 Engineering
113,001.04	----------	9960-906629-9557-9 Administration
$750,000.00		

The funds are required to cover the cost of Project 1175 Task No. 07, Design for the replacement of BC 6507, Phoenix Road Bridge over Gunpowder Falls and the current account deficit.

UPON MOTION duly made and seconded, the Board approved the assignment of Task No. 07 to Prime AE Group, Inc./Hardesty & Hanover, LLC (Joint Venture), under Project No. 1175, On-Call Bridge Design Services. The Transfer of Funds was approved, SUBJECT to the receipt of a favorable report from the Planning Commission, the Director of Finance having reported favorably thereon, in accordance with the provisions of the City Charter.

MINUTES

Department of Transportation – Minor Privilege Permits Applications

The Board is requested to approve the following applications for a Minor Privilege Permit. The applications are in order as to the Minor Privilege Regulations of the Board and the Building Regulations of Baltimore City.

	LOCATION	APPLICANT	PRIVILEGE/SIZE
1.	2127 E. Monument Street	Dogwood Sunset, LLC	Two single face electric signs, one at 37.3′, one at 25.8′
	Flat Charge: $1,003.29		
2.	3044 W. North Avenue	North Avenue Gateway II, LP	Canopy 18.25′ x 2.3′ Two handicap ramps, two retaining walls, one at 105 sq. ft., one at 318 sq. ft. two sets of steps, one at 24 sq. ft., one at 48 sq. ft.
	Annual Charge: $1,138.00		

Since no protests were received, there are no objections to approval.

UPON MOTION duly made and seconded, the Board approved the foregoing Minor Privilege Permits.

MINUTES

Department of Transportation – Agreement

ACTION REQUESTED OF B/E:

The Board is requested to approve and authorize execution of an Agreement with MRA Digital, LLC in connection with Project 1246, Automated Traffic Violation Enforcement System (ATVES). The period of the Agreement is effective upon Board approval for five years with the option to extend the period for two additional 2-year periods.

AMOUNT OF MONEY AND SOURCE:

$80,000.00 – 1001-000000-6971-659100-603051

BACKGROUND/EXPLANATION:

On January 22, 2016, the Department advertised a Request for Proposals (RFP) in connection with Project 1246, the ATVES. In response to the RFP, the City is procuring the services of two vendors to provide both Fixed and Portable School Zone and Work Zone Speed Cameras for the City. Pursuant to the Maryland Annotated Code, Transportation Article §§21-809 and 21-810, the Contractor will provide annual calibration checks for both Fixed and Portable School Zone and Work Zone Speed Cameras.

The Department determined through research that MRA Digital, LLC is the only company that has the expertise, business structure, past performance record, and calibration equipment available to service both selected vendors.

It is hereby certified, that the above procurement is of such a nature that no advantage will result in seeking nor would it be practical to obtain competitive bids. Therefore, pursuant to Article VI, Section 11 (e)(i) of the City Charter, the approval of this agreement is recommended.

Department of Transportation – cont'd

MBE/WBE PARTICIPATION:

Not applicable. This meets the requirement for certification as a selected source procurement. These services are only available from the vendor and are not available from subcontractors.

APPROVED FOR FUNDS BY FINANCE

UPON MOTION duly made and seconded, the Board approved and authorized execution of the Agreement with MRA Digital, LLC in connection with Project 1246, Automated Traffic Violation Enforcement System.

MINUTES

Department of Transportation – Agreement

ACTION REQUESTED OF B/E:

The Board is requested to approve and authorize execution of an Agreement with Conduent State & Local Solutions, Inc. for Project No. 1246, Automated Traffic Violation Enforcement System. The period of the Agreement is effective upon Board approval for five years with two 2-year renewal options.

AMOUNT OF MONEY AND SOURCE:

$4,167,600.00 – 1001-000000-6971-659100-603051

BACKGROUND/EXPLANATION:

On January 22, 2016, the Department advertised a Request for Proposals (RFP) for Project No. 1246, Automated Traffic Violation Enforcement System. On March 9, 2016, in response to the RFP, the Office of Boards and Commissions received seven responses comprised of technical and price proposals, offering to provide a new digital Automated Traffic Violation Enforcement System, including Fixed and Portable School Zone and Work Zone Speed Cameras, Red Light Enforcement Cameras and Commercial Vehicle (Truck Enforcement) Cameras.

The Department together with its Proposal Analysis Panel, evaluated the eligible responses. This evaluation included; written technical proposals, oral presentations, reference checks, hardware, and software testing of the finalists, and price proposals with best and final offers. The outcome of this analysis is that two contractors are recommended for this program with split awards. This includes one Contractor for Fixed and Portable School Zone and Work Zone Speed Cameras, and another Contractor for Red Light Enforcement Cameras and Commercial Vehicle (Truck Enforcement) Cameras. Splitting the award between two vendors provides assurance that if one vendor fails to perform, another vendor under contract ready to provide these services.

Conduent State & Local Solutions, Inc. (Conduent) was selected for Red Light and Commercial Vehicle cameras. Under this agreement, Conduent will provide all fixed and portable red light and vehicle cameras at designated locations selected by the Department along with public information and outreach campaign ("PI&O") public relations and advertising, study of prospective locations,

Department of Transportation – cont'd

preparation and submission of all permits and required documents, installation, maintenance, testing, and certification of equipment (with the exception of State mandated annual calibrations), installing, removing, and relocating of equipment at the direction of the city, replacement of damaged or destroyed equipment for any reason, capturing violations (including photographs and video) for all violations including multiple violator vehicles in up to six lanes in all weather and in all light conditions using threshold speeds specified by law or by the City, transmitting violations, photographs, and video, from the camera to a processing facility located in the City, provide and maintain a web-based automated system to track, process, and identify violating vehicles and the vehicle owners, process violations including allowance for two independent levels of City review, and mail City approved violations to vehicle owners or violators within the time limits established by law, transmit to the City, all contractor and City non-approved violations or events to a specialized City evaluation queue, transfer of all violation data and images to the City, in the format and interface necessary to conform to the City's database and security requirements, prepare and provide evidence for court and testify as required, provide statistics and prepare reports on systems operations and effectiveness of the program as requested by the City and/or as required by law, including the preparation of all State mandated reports.

MBE/WBE PARTICIPATION:

Conduent State & Local Solutions, Inc. will comply with Article 5, Subtitle 28, of the Baltimore City Code and is committed to utilizing the following minority companies to meet the established contract goals of 4% MBE and 1% WBE.

MBE:	Plexus Installation, Inc.	$114,499.00	2.75%
	Calmi Electrical Company, Inc.	114,499.00	2.75%
		$228,998.00	
WBE:	Sandy Hillman Communications, LLC	$625,000.00	15%

MWBOO FOUND VENDOR IN COMPLIANCE.

APPROVED FOR FUNDS BY FINANCE

Department of Transportation – cont'd

A PROTEST WAS RECEIVED FROM MS. KIM TRUEHEART.

The Board of Estimates received and reviewed Ms. Trueheart's protest. As Ms. Trueheart does not have a specific interest that is different from that of the general public, the Board will not hear her protest.

*** * * * * ***

Kim A. Trueheart

May 16, 2017

Board of Estimates
Attn: Clerk
City Hall, Room 204
100 N. Holliday Street,
Baltimore, Maryland 21202

Dear Ms. Taylor:

Herein is my written protest on behalf of the underserved and disparately treated citizens of the Baltimore City who appear to be victims of questionable management and administration within the various boards, commissions, agencies and departments of the Baltimore City municipal government.

The following details are provided to initiate this action as required by the Board of Estimates:

1. Whom you represent: Self
2. What the issues are:
    a. Pages 69-74, Department of Transportation - Agreements – with Conduent State & Local Solutions, Inc. and American Traffic Solutions, Inc., for Project 1246, if approved:
        i. This purchase agreement identifies a new revenue source for the dwindling local tax base, which is a rare and necessary, yet:
            1. Fails to disclose the anticipated revenue from this agreement;
            2. Fails to disclose where future revenue will be applied;
    b. <u>How the protestant will be harmed by the proposed Board of Estimates' action</u>: I am an underserved, disparately treated, over-taxed citizen of Baltimore City and a victim of poor fiscal planning, management an administration by the Finance Department of Baltimore City. On behalf of the children and youth of Baltimore City, who have in recent years been dis-invested, allocation of this new revenue source to the general fund continues that practice.
3. How the protestant will be harmed by the proposed Board of Estimates' action: As a citizen I have witnessed what appears to be a significant dearth in responsible and accountable leadership, management and cogent decision making within the various

Email: kimtrueheart@gmail.com
5519 Belleville Ave
Baltimore, MD 21207

agencies and departments of the Baltimore City municipal government which potentially cost myself and my fellow citizens excessive amounts of money in cost over-runs and wasteful spending. On behalf of the children and youth of Baltimore City, who have in recent years been dis-invested, allocation of this new revenue source to the general fund continues that practice.

4. The remedy I seek and respectfully request is that this action be withdrawn and the Mayor and City Council direct the Finance Department to distribute all the revenue (at least 50% of the anticipated total) from each school zone Automated Traffic Violation Enforcement System be appropriated for afterschool programs and community schools.

I look forward to the opportunity to address this matter in person at your upcoming meeting of the Board of Estimates on May 17, 2017.

If you have any questions regarding this request, please telephone me at (410) 205-5114.

Sincerely,
Kim Trueheart,
Voter, Citizen & Resident

5519 Belleville Ave
Baltimore, MD 21207

President: "The first item on the non-routine agenda can be found on pages 69-71 Department of Transportation Agreement. Will the parties please come forward?"

Frank Murphy: "Good morning."

President: "Good morning."

Frank Murphy: "Good Morning Madam Mayor, Mr. President, Madam Comptroller, members of the Board. I'm Frank Murphy, Acting Director of Transportation. The Department of Transportation is recommending the award of the contract to uh-- Xerox/Conduent as um -- listed in the BOE Agenda. Do you have any questions for-- any questions from anyone?"

President: "Any questions from anyone?"

Frank Murphy: "Oh pardon me, I was remiss. Introducing Mr. Liberati, Robert Liberati. He is our Program Manager for the uhh-- Automated Traffic Violence Enforcement System."

President: "Any questions from anyone?"

Comptroller: "No I don't have any questions, but when the vote is called I'm going to **ABSTAIN** because in the past Xerox umm-- until December of 2016, Xer-- Xerox was in existence and then changed its name to Conduent, and I'm not sure-- I'm not certain that sufficient vetting was done to show in anyway that Xerox has improved and that we would not have a repeat of the same problems that we had in the past. So, I don't have any question, but I will **ABSTAIN** when the vote is called."

President: "Okay, I will entertain the motion."

Interim City Solicitor: "I move that we approve the award as recommended on page 69 of the—- 69 through 71 of the Agenda."

Director of Public Works: "Second."

President: "All those in favor say AYE. All opposed, NAY. Please note that the Comptroller **ABSTAINS**. All right the Motion carries."

* * * * * *

MINUTES

Department of Transportation – Agreement

ACTION REQUESTED OF B/E:

The Board is requested to approve and authorize execution of an agreement with American Traffic Solutions, Inc., for Project 1246, Automated Traffic Violation Enforcement System (ATVES). The period of the agreement is effective upon Board approval for five years, with two 2-year options.

AMOUNT OF MONEY AND SOURCE:

$5,400,000.00 – 1001-000000-6971-659100-603051

BACKGROUND/EXPLANATION:

On January 22, 2016, the Department advertised a Request for Proposals (RFP) for the subject project. In response to the RFP, the Office of Boards and Commissions received seven responses comprised of technical and price proposals, on March 9, 2016, offering to provide a new digital Automated Traffic Violation Enforcement System, including Fixed and Portable School Zone and Work Zone Speed Cameras, Red Light Enforcement Cameras and Commercial Vehicle (Truck Enforcement) Cameras.

The Department, together with its Proposal Analysis Panel, evaluated the eligible responses. This evaluation included, written technical proposals, oral presentations, reference checks, hardware and software testing of the finalists, and price proposals with best and final offers. The outcome of this analysis is that two contractors are recommended for this program with split awards. This includes one Contractor for Fixed and Portable School Zone and Work Zone Speed Cameras, and another Contractor for Red Light Enforcement Cameras and Commercial Vehicle (Truck Enforcement) Cameras. Splitting the award between two vendors provides assurance that if one vendor fails to perform, we have another vendor under contract ready to provide these services.

The Contractor chosen for Fixed and Portable School Zone and Work Zone Speed Cameras is American Traffic Solutions, Inc. (ATS). Under an agreement, the ATS will provide all fixed and portable school zone and work zone speed cameras, public information, and outreach

DOT – cont'd

campaign (PI&O) public relations and advertising, study of prospective locations, preparation and submission of all permits and required documents, installation, maintenance, testing, and certification of equipment (with the exception of state mandated annual calibrations), installing, removing, and relocating of equipment at the direction of the city, replacement of damaged or destroyed equipment for any reason, capturing violations (including photographs and video) for all violations including multiple violator vehicles in up to six lanes in all weather and in all light conditions using threshold speeds specified by law or by the city, transmitting violations, photographs, and video, from the camera to a processing facility located, web-based automated system to track, process, and identify violating vehicles and the vehicle owners, process violations including allowance for two independent levels of city review, and mail city approved violations to vehicle owners or violators within the time limits established by law, transmit to the city, all contractor and city non-approved violations or events to a specialized city evaluation queue, transfer of all violation data and images to the city, in the format and interface necessary to conform to the city's database and security requirements, prepare and provide evidence for court and testify as required, provide statistics and prepare reports on systems operations and effectiveness of the program as requested by the city and/or as required by law, including the preparation of all state mandated reports.

MBE/WBE PARTICIPATION:

The agreement provider, ATS will adhere to Article 5, Subtitle 28, and in doing so is committed to utilizing the following minority companies to meet the established contract goals of MBE 4% and WBE 1%.

MBE:	Mimar Architects & Engineers, Inc.	$ 40,000.00	0.74%
	Calmi Electrical Co., Inc.	216,000.00	4.00%
		$256,000.00	**4.74%**
WBE:	Greibo K. Designs, Inc.	$ 54,000.00	1%

DOT – cont'd

APPROVED FOR FUNDS BY FINANCE

UPON MOTION duly made and seconded, the Board approved and authorized execution of the agreement with American Traffic Solutions, Inc., for Project 1246, Automated Traffic Violation Enforcement System.

MINUTES

RECOMMENDATIONS FOR CONTRACT AWARDS/REJECTIONS

* * * * * * *

On the recommendations of the City agencies hereinafter named, the Board, UPON MOTION duly made and seconded, awarded the formally advertised contracts listed on the following pages:

1804 - 1808

to the low bidders meeting the specifications, or rejected bids on those as indicated for the reasons stated.

The Transfers of Funds were approved SUBJECT to receipt of favorable reports from the Planning Commission, the Director of Finance having reported favorably thereon, as required by the provisions of the City Charter.

RECOMMENDATIONS FOR CONTRACT AWARDS/REJECTIONS

Department of Public Works/Office of Engineering and Construction

1. WC 1293, Water Infrastructure Rehabilitation Various Locations — J. Fletcher Creamer & Son, Inc. — $6,617,470.00

MBE: Manuel Luis Construction Co., Inc. — $620,000.00 — 9.36%

WBE: R&R Contracting — $140,000.00 — 2.11%

MWBOO FOUND VENDOR IN COMPLIANCE.

2. **TRANSFER OF FUNDS**

AMOUNT	**FROM ACCOUNT/S**	**TO ACCOUNT/S**
$8,961,012.00 Water Revenue Bonds	9960-909100-9558 Constr. Reserve	
$ 661,747.00	----------	9960-922101-9557-900020-2 Extra Work
661,747.00	----------	9960-922101-9557-900020-3 Engineering
623,000.00	----------	9960-922101-9557-900020-5 Inspection
6,617,470.00	----------	9960-922101-9557-900020-6 Construction
397,048.00	----------	9960-922101-9557-900020-9 Administration
$8,961,012.00		

RECOMMENDATIONS FOR CONTRACT AWARDS/REJECTIONS

Department of Public Works/Office – cont'd
of Engineering and Construction

The funds are required to cover the cost for the award of WC 1293, Water Infrastructure Rehabilitation at Various Locations.

Department of Transportation

3.	TR 17006, Urgent Need Contract Citywide II	P. Flanigan & Sons, Inc.		$1,196,735.50
	MBE:	Priority Construction Corp.	$263,400.00	22%
	WBE:	Fallsway Construction Co., LLC	$ 32,000.00	2.67%
		B&J Sweeping & Sons, Inc.	19,800.00	1.65%
		River Transport, Inc.	56,000.00	4.68%
			$107,800.00	**9.00%**

MWBOO FOUND VENDOR IN COMPLIANCE.

4. **TRANSFER OF FUNDS**

AMOUNT	**FROM ACCOUNT/S**	**TO ACCOUNT/S**
$1,436,082.60 State Construction Revenue	9950-956002-9515 Resurfacing JOC Urgent Needs – Constr. Reserve	

Department of Public Works/Office – cont'd
of Engineering and Construction

The funds are required to cover the cost for the award of WC 1293, Water Infrastructure Rehabilitation at Various Locations.

Department of Transportation

5. TR 17006, Urgent Need Contract Citywide II — P. Flanigan & Sons, Inc. — $1,196,735.50

MBE:	Priority Construction Corp.	$263,400.00	22%
WBE:	Fallsway Construction Co., LLC	$ 32,000.00	2.67%
	B&J Sweeping & Sons, Inc.	19,800.00	1.65%
	River Transport, Inc.	56,000.00	4.68%
		$107,800.00	**9.00%**

MWBOO FOUND VENDOR IN COMPLIANCE.

6. **TRANSFER OF FUNDS**

AMOUNT	**FROM ACCOUNT/S**	**TO ACCOUNT/S**
$1,436,082.60 State Construction Revenue	9950-956002-9515 Resurfacing JOC Urgent Needs – Constr. Reserve	

RECOMMENDATIONS FOR CONTRACT AWARDS/REJECTIONS

Department of Transportation – cont'd

$1,196,735.50	----------	9950-916005-9514-6 Structural and Improvements
179,510.32	----------	9950-916005-9514-5 Inspection
59,836.78	----------	9950-916005-9514-2 Contingencies Resurfacing Urgent Needs Citywide
$1,436,082.60		

This transfer will fund costs associated with Award of TR 17006, Resurfacing Urgent Needs Citywide with P. Flanigan & Sons, Inc.

Bureau of Purchases

7.	B50004958, Fire Hydrants and Replacement Parts	HD Supply Waterworks, LTD Ferguson Enterprises, Inc. d/b/a Ferguson Waterworks L/B Water Service, Inc.	$ 3,000,000.00

(Dept. of Public Works, Bureau of Water & Wastewater)

MWBOO GRANTED A WAIVER

8.	B50004886, Coveralls for Baltimore City Fire Department	Municipal Emergency Services, Inc.	$ 93,246.00

(Fire Dept.)

RECOMMENDATIONS FOR CONTRACT AWARDS/REJECTIONS

Bureau of Purchases

9.	B50004973, Iron Pipe and Fittings	Ferguson Enterprises, Inc. d/b/a Ferguson Waterworks HD Supply Waterworks, LTD L/B Water Service, Inc.	$ 3,000,000.00

(Dept. of Public Works)

MWBOO GRANTED A WAIVER

Department of General Services

10.	GS 16808, Roof Replacement & Repairs at the EPFL Branch #13	**REJECTION –** On April 26, 2017, the Board opened one bid for GS 16808. The bid was beyond the acceptable cost range for the project. The Department of General Services determined that it is in the best interest of the City to reject the bid. The Department of General Services will request permission to re-bid at a future date.

MINUTES

Bureau of Purchases - Acceptance of Technical Proposals and Opening of Price Proposals

ACTION REQUESTED OF B/E:

The Board is requested to accept the technical proposals submitted in response to Solicitation No. B50004537 - Diversity and Labor Compliance System and authorize the opening of the envelope "B" containing the price proposals of the following vendors:

AskReply, Inc. d/b/a B2Gnow
Early Morning Software, Inc.

The Board is further requested to authorize the return of the remaining price proposal to the proposer, Laisar Management Group, LLC, which did not meet the minimum technical score.

AMOUNT OF MONEY AND SOURCE:

N/A

BACKGROUND/EXPLANATION:

On August 24, 2017, the Board opened the Technical proposals for the above referenced solicitation B50004537. The three technical proposals received were found responsive and subsequently reviewed by the evaluation committee for technical scoring. Out of the three responsive proposals scored by the evaluation committee, two met the City's technical score requirements for price opening.

President: "The fourth [*sic* – second] item on the non-routine Agenda can be found on pages-- on page 80, Bureau of Purchases Acceptance of Technical Proposals and Opening of Price Proposals. Will the parties please come forward? Good morning."

Erin Sher Smyth: "Good morning, Erin Sher Smyth, City Purchasing Agent for the Department of Finance. This morning I am recommending that we accept the technical proposals of Ask Reply, Inc. and Early Morning Software and open the prices for further evaluation."

President: "Uh -- Madam Comptroller do you have--."

Comptroller: "I -- I do, I'm wondering how you can do that because on umm—- at the Board meeting of November 23rd, a request was made by this Board that umm—- you would be allowed to umm—- come back to this -- Boa-- Board and make a—- make a recommendation and report, why this company should be allowed to cure and that has not been done.

Ms. Sher Smyth: "I apologize if there is a misunderstanding, my reading of the minutes of November 23, 2016, were that uhh—- David Ralph Interim City Solicitor, moved to approve the cures and because that was approved by the Board, I believed that means we could move forward with the price opening without the additional step."

Comptroller: "No, umm–– I –– David Ralph did say that, but I also amended it by saying that the Bureau of Purchases should come back to this Board and ask for approval because it is only the Board of Estimates that is able to allow you to cure and it appears that you were relying on the regulations that had not been approved by this Board. So are you able to make a report to this Board so that we can move forward of why they are allowed to cure?"

Ms. Sher Smyth: "Umm – I believe I can umm --."

Comptroller: "Okay."

Ms. Sher Smyth: "The –– the issue with the uhh –– bid guarantee was that it was a business check rather than a certified check and uhh –– we informed the bidder of the problem. They immediately cured it. So the City at no point was umm –– was without protection and at this point we haven't moved to award. So as long as the cure happens before award recommendation the City is protected as the bid guarantee is solely –– to ensure that they sign the agreement if they are actually recommended for award. So I believe that the mistake was made in good faith and the City was not harmed nor was there any umm –– issue that caused there to be a lack of

a umm -- fair process for any other bidders as this was solely to protect the City."

Comptroller: "I understand that, but the Bureau of Purchases is not allowed umm -- doesn't have the authority -- this Board has the authority to give you the approval to cure and that didn't happen, and at that Board meeting I said that I wanted to make sure that this did not start a precedent. So the -- the motion was and if you go back and follow the minutes uh -- you will see that David Ralph did make that motion, but I amended it by saying that the Bureau of Purchases must come back to this Board and make a re-- make a report."

Ms. Sher Smyth: "Okay and I apologize I don't have that in the minutes, but I can make a report and a request at this time that the cure be approved by the Board of Estimates so that we can open the prices of both -- of the technically acceptable proposing vendors."

President: "Umm -- have -- have you all made this exception umm -- for any other umm -- contact before?"

Ms. Sher Smyth: "Nothing that hasn't come--."

President: "Have you ever denied anyone? Have you denied anyone?"

Ms. Sher Smyth: "Nothing that hasn't been submitted to the Board we have—-."

Comptroller: "If--."

Ms. Sher Smyth: "we have--."

Comptroller: "If you go back to your tab sheet if -- if you're not relying on the minutes -- if you go back to the—- your tab sheet it states on November 23, 2016, the Board approved the Bureau of Purchases to evaluate whether the non-responsive bid security can be cured and to report to the Board—-."

President: "What's the date on that?"

Comptroller: "The date on this is umm --"

President: "12/1."

Comptroller: "12/1, but I -- I will finish reading it says 'on November 23, the Board approved the Bureau of Purchases to evaluate whether the non-responsive bid security can be cured and to report

to the Board on the results so that the Board can consider the Bureau of Purchases' recommendation. The bid was forwarded to the Bureau of Purchases as the Board directed.' So it's on the tab sheet. So for you to say that you didn't follow the minutes or it wasn't in the minutes, it's -- it's -- on the tab sheet and it is also -- it is also on the umm -- on the Board letter dated November 1 [December 1], it says 'upon duly -- Upon Motion Duly Made and Seconded, the Board approved the Bureau of Purchases to evaluate whether the non-responsive bid security can be cured and to report to the Board on the results so that the Board can consider the Bureau of Purchases recommendation and the underlining results of the bid security for the Board approval with the proviso that the Board action does not set a precedent and applies only to the bids listed in the Board memo.' You didn't have access to this information?"

Ms. Sher Smyth: "Oh I -- I do but the minutes don't show that that was required and because the recommendation was originally was to follow that process after the Board approved the cure uh—- it

appeared to be a moot issue, uhh-- if not, if there is a disagreement as to whether the Board actually did take that umm -- - either -- I would ask that there be an opinion as to whether that was done or I -- you allow me to make my report verbally at this time. I believe it is in the City's best interest to open the price proposals of both technically acceptable vendors."

Comptroller: "Okay, let's see here, I have the minutes here umm--."

Mayor: "Can I ask a question?"

President: "Madam Mayor. She wants to ask a question."

Comptroller: "Okay."

Mayor: "So the question is, because the Board should give approval?"

Comptroller: "Yes."

Mayor: "Is it appropriate for her to ask for approval and is -- is that what you're asking her to do? So you need to ask for the approval of the Board regarding this particular issue and then we have the responsibility to accept or reject?"

Comptroller: "Right."

Mayor: "Correct."

Ms. Sher Smyth: "Yes, I would ask the Board at this time approve the cure of AskReply's umm-— bid security."

Comptroller: "Okay. Uh--Before we do that could you make a verbal report of why they should cure? I know you said it -- because you can't just call up a bidder and the -- the manner said that it must be a certified check. The Bureau of Purchases called the bidder up and had them bring down a $8,000.00 -- a -- they -- they -- offered a company check of $8,000.00. The Bureau of Purchases called them up and asked them to bring a Certified Check."

Mayor: "Certified."

Comptroller: "So why -- what is the."

Mayor: "Procedure."

Comptroller: "Why—- I understand that you said for competiveness and that it didn't harm the City in any way but why?"

Ms. Sher Smyth: "Well historically we have been very firm and the Charter required that, we had no room to accept a good faith effort

or allow cure of a -- of a small technical mistake. However, with the Charter Amendment we believe that does allow for the Board to umm -- review the good faith effort and to allow the cure and that -- that would in the end allow for the additional competition and to get better technical proposals and lower prices. So it is in the City's best interest that when there is no attempt to avoid providing a bid guarantee but the mistake was made in good faith and in this case we believe it was."

Comptroller: "So what was the good faith effort?"

Ms. Sher Smyth: "They provided the company check and it was in the incorrect form however, there is no reason to believe that the check was invalid."

Comptroller: "Say that -- say that."

President: "Talk into the mic."

Comptroller: "The good faith effort -- effort was what now?"

Ms. Sher Smyth: "Was providing a company check in the amount of $8,000.00 and we believe that that was a inadvertent mistake as they—-."

Comptroller: "A mistake--."

Ms. Sher Smyth: "Immediately cured by providing the certified check and we don't have any reason to believe that they would not have done that in the first instance if they were aware that they were making a mistake."

Comptroller: "So they really didn't make a good faith -- faith effort you're just saying it was a mistake."

Ms. Sher Smyth: "No, I -- I believe they made a good faith effort to comply they did make a mistake however, and we're asking that mistake umm -- to be -- well were asking that their effort to correct their mistake that to cure is accepted so that we can accept their technical proposal and open their price at this time."

Comptroller: "Okay."

President: "Okay you going to make your report? Are you making your report?"

Ms. Sher Smyth: "Oh, I apologize -- I -- I."

President: "So much is going on. Okay. All right so"

Comptroller: "So you're asking the Board approval?"

Ms. Sher Smyth: "Yes, I am asking for the Board's approval to accept the cure and to open the prices of both AskReply and Early Morning Software at this time."

Comptroller: "So the Board needs to approve that."

President: "I entertain the motion."

Interim City Solicitor: "I Move that we uh -- that the Board accept the recommendation to uhh -- allow a cure in this instance of the for -- the umm -- security issue that was presented in this case and that also the Board umm -- open the items as suggested on page 80 of the Board's Agenda."

Director of Public Works: "Second."

Comptroller: "Second."

President: "All those in favor say AYE. All opposed NAY. I just want to uhh -- let you know that we don't want to see this again. Come and ask for the Board's approval prior to coming to us with this."

Ms. Sher Smyth: "I agree and uhh -- I hope that in the future we have some procurement regulations this can now be a nice clear process that were -- we don't get to this -- sorry -- confusion again, so I apologize."

President: "Okay. Thank you."

* * * * * *

MINUTES

Department of Finance – Revised Administrative Manual Policies – AM 413-00 through AM 413-70

ACTION REQUESTED OF B/E:

The Board is requested to approve the following revised Administrative Manual Policies:

- AM 413-00 Grant Management & Administration
- AM 413-10 Grant Identification
- AM 413-20 Grant Screening & Evaluation
- AM 413-30 Grant Preparation & Application
- AM 413-40 Grant Management Review
- AM 413-50 Grant Award
- AM 413-60 Grant Documentation
- AM 413-61 Grant Management Financial Reporting
- AM 413-70 Grant Closeout

These policies are effective upon Board Approval.

AMOUNT AND SOURCE OF FUNDS:

There are no costs associated with these actions.

BACKGROUND/EXPLANATION:

The Administrative Manual (AM) communicates official City policies and procedures that affect the City's operations and its employees. Through the authority of the Board of Estimates, the published policies provide uniform and consistent operating rules. The enclosed policies reflect updates and removes obsolete procedures and will provide greater clarity as well as a standardized and centralized approach to grants management operations, functions and requirements.

The revisions are being submitted in groups addressing similar subject matter. This collection of AM revisions pertains to the City's grants management operations. All policies in this set are in the 413 series and the proposed changes in each are listed below:

Department of Finance – cont'd

AM 413-00 (Grants Management & Administration):
This policy establishes a grants management committee within each agency, organization and/or entity that oversees grant activities and ensures compliance with all grant-related City of Baltimore AM Policies and Office of Management and Budget (OMB) circulars. The revisions to this policy are as follows:

- Establishes an internal grants management committee (GMC) and designates a senior staff member with authority to make grant(s)-related decisions, to serve as chairperson.
- Committee monitors and ensures agency/entity compliance with all AM and OMB grant management policies.

AM 413-10 (Grant Identification):
This policy uses early identification and proactive planning to forecast opportunities and capture grants. This pre-planning process optimizes the opportunity for success when applying for grants.

- Designates an individual to track all germane grant announcements, via the Internet (e.g., Grants.gov or Grantfinder.com), electronic or standard mail, by telephone, through professional contacts or other sources.
- Identifies and tracks all grant opportunities that align with the organization's long-range strategic plans and/or the agency's mission as far in advance as possible.

AM 413-20 (Grants Screening & Evaluation):
This policy promotes a proactive assessment and determination of each grant's requirements to minimize confusion and maximize preparation time prior to submitting an application:

- Requires grant management staff to determine all grant application requirements, to include determining whether the grant application requires sustainability or matching funds.

Department of Finance – cont'd

AM 413-30 (Grants Preparation & Application):
The purpose of this policy is to generate a checklist of requirements as detailed in a Scope of Work (SOW), Notice of Funding Availability (NOFA) or Request for Proposal (RFP) and to collaborate with the Bureau of the Budget and Management Research (BBMR) when preparing a grant application's budget proposal, as follows:

- identifies and designates a grant proposal manager as early as possible;
- designates a grant writer(s) and/or budget proposal manager; and,
- identifies key hires as soon as possible.

AM 413-40 (Grant Management Review):
This policy provides management with an opportunity to review all grant applications and ensure the quality and completeness of all required supporting documentation, (e.g., technical and cost proposals) prior to submission, as follows:

- ensures grant submission meets the requirements detailed in the Scope of Work, in collaboration with the agency/entity's BBMR Budget Analyst prior to senior management review; then,
- returns draft document(s) to budget proposal manager for correction, if necessary.

AM 413-50 (Grant Award):
The purpose of this policy is to expedite the award process, obtaining a project number and establishing a budget account number allows an agency/entity to begin grant operations as soon as possible, as follows:

- upon receipt of grant award updates award information in CRM software;
- forwards copies of the award letter and sub-recipient agreement(s) to the law department for review; and,
- forwards approved grant award notification and sub-recipient agreement(s) to the Board of Estimates (BOE) for approval.

Department of Finance – cont'd

AM 413-60 (Grant Documentation):
The purpose of this policy is to ensure proper documentation to avoid audit findings, disallowed costs and/or non-compliance issues, as follows:

- conducts ongoing monitoring and control of all reimbursement receipts and deposits until grant ends; as well as all program and sub-recipient documentation; and,
- establishes and maintains a hardcopy desk-reference audit file.

AM 413-61 (Grant Management Financial Reporting):
To establish a Citywide financial reporting approach for all grants that is accurate and allowable based on the specific terms and conditions of each grant, and reviewed and approved by appropriate City of Baltimore supervisory personnel. This policy was previously approved by the Board of Estimates (as policy number 404-2). It has been renumbered with minor content edits to match the grants management policies.

AM 413-70 (Grant Closeout):
The purpose of this policy is to ensure a proper and timely closeout of all ending grants and to identify grants that should be renewed, as follows:

- determines if a grant will be ending or renewed. If the grant is ending, the grant manager pulls together details of the grant's operations; to include, financial transactions, program narrative and/or required grantor closeout information; and,
- completes an Internal Closeout Checklist to ensure all activities and transmittals have been completed, documented and submitted timely.

With the approval of the Board of Estimates, the above-listed AM Policies, **400-3 Indirect Cost Reimbursement for Federal Grants and Contracts, AM 404-1 Financial Grants, AM 404-1-1 Applying for Grants, and AM 404-1-1 Action upon Receiving Grant Approval** are rescinded.

MBE/WBE PARTICIPATION:

N/A

a AM 413-00

m

Grants Management & Administration

PROCEDURES

NOTE

- Procedural items preceded by this symbol ✓ are designated as quality issues. Failure to adhere to this requirement can impact the overall quality of this policy.
- Procedural items preceded by this symbol RISK are designated as risk issues. Failure to monitor this requirement can create an unwarranted risk.

Agency/Entity:

1. Establishes an internal Grants Management Committee (GMC) and designates a senior staff member with authority to make grant-related decisions to serve as chairperson.

Grants Management Committee (GMC):

2. Monitors and ensures agency/entity compliance with all relevant (Federal) Office of Management and Budget (OMB) circulars, all grant-related City of Baltimore Administrative Manual (AM) policies as well as all applicable State and/or foundation requirements;

3. Designates a committee member to document and archive the minutes of each GMC meeting on the City's grants management SharePoint site, at: https://portal.baltimorecity.gov/dof/GM/SitePages/Home.aspx;

✓ 4. Ensures the agency/entity maintains a cadre of trained grant managers, grant writers and (grant) budget proposal managers to prepare and/or submit grant applications;

5. Retains documented evidence of training(s) in a (hardcopy) file and on the City's grants management SharePoint site;

6. Keeps current *all* active grants, grant activity and assigned grant managers on the City's grants management Customer Relationship Management (CRM) site, at: https://bmore.crm9.dynamics.com/main.aspx; and,

7. Ensures all single audit and grants management office findings are immediately corrected.

8. Reviews, at a minimum, the following information during each GMC meeting:

Applications

9. Projects what new or renewal grant applications are forthcoming and determines:
   a. What resources will be needed;
   b. What (key) staff, sub-recipients or consultants are required; and,
   c. Whom to designate as application manager and/or budget proposal manager(s).

10. Follows the steps detailed in AM policies: **413-10 Grant Identification**; **413-20 Grant Screening & Evaluation**; **413.30 Grant Application & Preparation** and **413.40 Grant Management Review** when making a grant application;

11. In the event of a non-awarded grant, requests a debrief from reviewer(s) to learn about the application's content weaknesses and/or to obtain feedback on the budget that negatively impacted the submission; and,

12. Retains all debrief notes on the City's SharePoint site along with the original grant application so that appropriate adjustments can be made to optimize the agency/entity's chances for future grant awards.

Budgets

13. Reviews budget charts/graphs or data to highlight and focus upon areas of concern; e.g., over- or under-spending - in collaboration with the agency/entity's fiscal staff and/or their assigned Bureau of the Budget and Management Research (BBMR) Budget Analyst; and,

14. Ensures all grant-related primary accounts and subaccounts are closed within 45-days of the grant's end date and that all receipts, invoices or charges received or posted after the grant's closure were incurred within the grant's period of performance.

a AM 413-00

m

Grants Management & Administration

Tracking

15. Maintains a shared calendar to project new and renewal applications, anticipated audits, expiration dates for Grant Services Specialist (GSS) positions (if applicable), grant closeout dates, grant extensions, periodic reports as required by the grantor, and forecasted GMC meeting dates.

Public Relations

16. Periodically submits success stories generated from their grants management efforts to the grants management office and mayor's director of communications. Each submission should describe who was involved, what happened and when and where the activity took place. To submit success stories, click the **Send Email Alert** and **Submit Success Story** buttons on the City's grants management SharePoint site;

17. Depending upon the number of grants an agency manages, the committee and/or a designated staff member(s) should submit the following number of public relations articles annually, for:

- 0-10 grants - 1 per year;
- 11-25 grants - 2 per year;
- 26-50 grants - 3 per year;
- 51-75 grants - 4 per year;
- 76-100 grants - 5 per year; or,
- 100+ grants - 6 per year.

18. Committees are encouraged to exceed recommended success story submission requirements.

Lobbying

19. In the event the GMC feels that external lobbying on the agency/entity's behalf will help ensure a successful grant award, submits a lobbying request to the Deputy Mayor of Government Relations and Labor. To submit lobbying requests, click the **Send Email Alert** and **Request Grant Support** buttons on the City's grants management SharePoint site.

Grants Management & Administration

Grants Manager:

20. Takes corrective action based on audit results or feedback from grantor, auditing or the grants management office; and,

21. Follows **AM Policies 413-50 Grant Award**; **413.60 Grant Documentation**; **413.61 Grant Management Financial Reporting** and **413-70 Grant Closeout** for the daily operation and ultimate closure of each grant.

Grants Management Office:

22. Monitors each agency/entity's grants management activities and provides database access, guidance, support and resources as needed;

23. Performs internal control testing in accordance with applicable OMB circulars and the City's grants management policies and procedures;

24. Monitors all grant accounts to ensure drawdowns and expenditures are timely, occur within the grant's period of performance, are appropriately charged and minimize unspent funds and/or negative budget variances;

25. Conducts annual compliance reviews of the City's agency/entities with grants, to monitor compliance with all applicable grants management Administrative Manual (AM) policies, OMB circulars, State or foundation requirements;

26. As necessary, submits a corresponding compliance report to each agency/entities' head and GMC for corrective action; and,

27. Chairs periodic grants management steering committee meetings.

POLICY OWNER

The City of Baltimore grants management office is responsible for all changes and/or updates to this policy.

WORKFLOW PROCESS

A flowchart displays workflow graphically, using some or all of the following process symbols.

Grants Management & Administration

PROCESS KEY

Figure 1, below, graphically displays the primary steps followed in the **Grants Management & Administration** process.

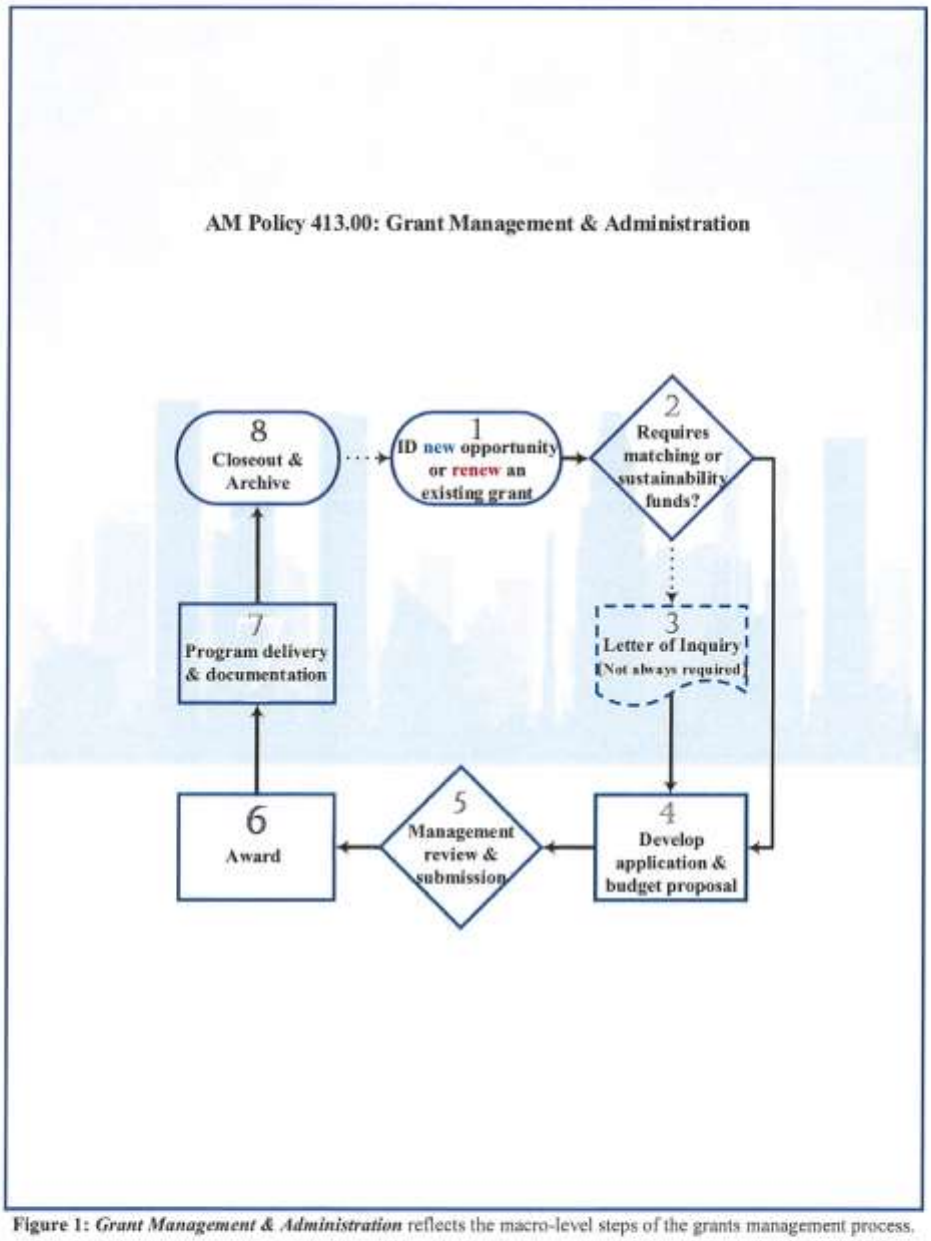

Figure 1: ***Grant Management & Administration*** reflects the macro-level steps of the grants management process.

a m

AM 413-10

Grant Identification

PURPOSE

Early identification and proactive planning are key to forecasting and capturing grant awards. This policy establishes a preplanning process that optimizes the opportunity for success when applying for a grant.

SCOPE

This policy is applicable to all City of Baltimore agencies/entities that use grant funding, as well as any other organizations for which the City serves as grantor or contributes resources. Moreover, this policy supersedes and replaces **AM 404-1 Financial Grants**, **AM 404-1-1 Applying for Grants** and **AM 404-1-2 Action upon Receiving Grant Approval**.

POLICY STATEMENT

Each City of Baltimore agency/entity that receives grant funding must form a grants management committee to support the early identification and vetting of all relevant grant opportunities. For an explanation of the grant management committees' roles and responsibilities, see **Administrative Manual (AM) Policy 413-00, Grants Management & Administration**.

PROCEDURE

NOTE

- Procedural items preceded by this symbol ✓ are designated as quality issues. Failure to adhere to this requirement can impact the overall quality of this policy.
- Procedural items preceded by this symbol ▽ are designated as risk issues. Failure to monitor this requirement can create an unwarranted risk.

Grants Management Committee:

1. Designates at least one individual to track all germane grant announcements, via the Internet (e.g., Grants.gov or Grantfinder.com), electronic or standard mail, by telephone, through professional contacts or other sources. This designee must:

[redacted]

a AM 413-10

m

Grant Identification

a. Be a member of the agency/entity's grants management committee;

b. Create a grant record in the City's Customer Relationship Management (CRM) software immediately after identifying the candidate grant. The grants management CRM can be accessed at https://bmore.crm9.dynamics.com/main.aspx;

c. Maintain and periodically update a comprehensive listing of agency/entity specific keywords and/or search terms in SharePoint for use when searching for grants;

d. Negotiate with other agencies/entities in the event two or more entities wish to apply for the same grant. Synergistic alliances that benefit the City are encouraged;

2. Determine if the grant opportunity is a *new* or *renewal* application. For renewal applications, skip forward to **AM Policy 413-30, Grant Preparation & Application**;

3. Identify and track all grant opportunities that align with the organization's long-range strategic plans and/or the agency's mission as far in advance as possible;

4. Determine if the new grant application aligns with the Mayor's Priority Outcomes and/or the agency's mission. If an agency/entity wishes to apply for a grant that does not align with the Mayors' Priority Outcomes and/or the agency's mission, the grants management committee chairperson must obtain and keep on file a written exemption to this requirement from the appropriate Deputy Mayor;

5. Document all grant targets in the CRM database then advance to **AM Policy 413-20, Grant Screening and Evaluation**; also,

6. In the event the grants management committee feels additional, external support is warranted to ensure a successful grant application, refer to **AM Policy 413-00, Grants Management & Administration: Lobbying**.

[redacted]

a AM 413-10

m

Grant Identification

POLICY OWNER

The grants management office is responsible for all changes and/or updates to this policy.

WORKFLOW PROCESS

A flowchart displays workflow graphically, using some or all of the following process symbols.

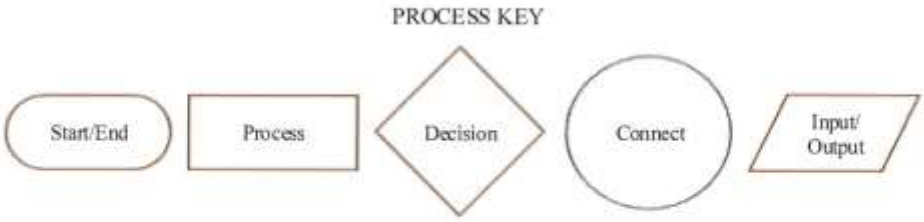

Figure 1, below, graphically displays the primary steps followed in the **Grant Identification** process. As shown, new grant applications follow a dotted line path while renewal applications follow a dashed line path.

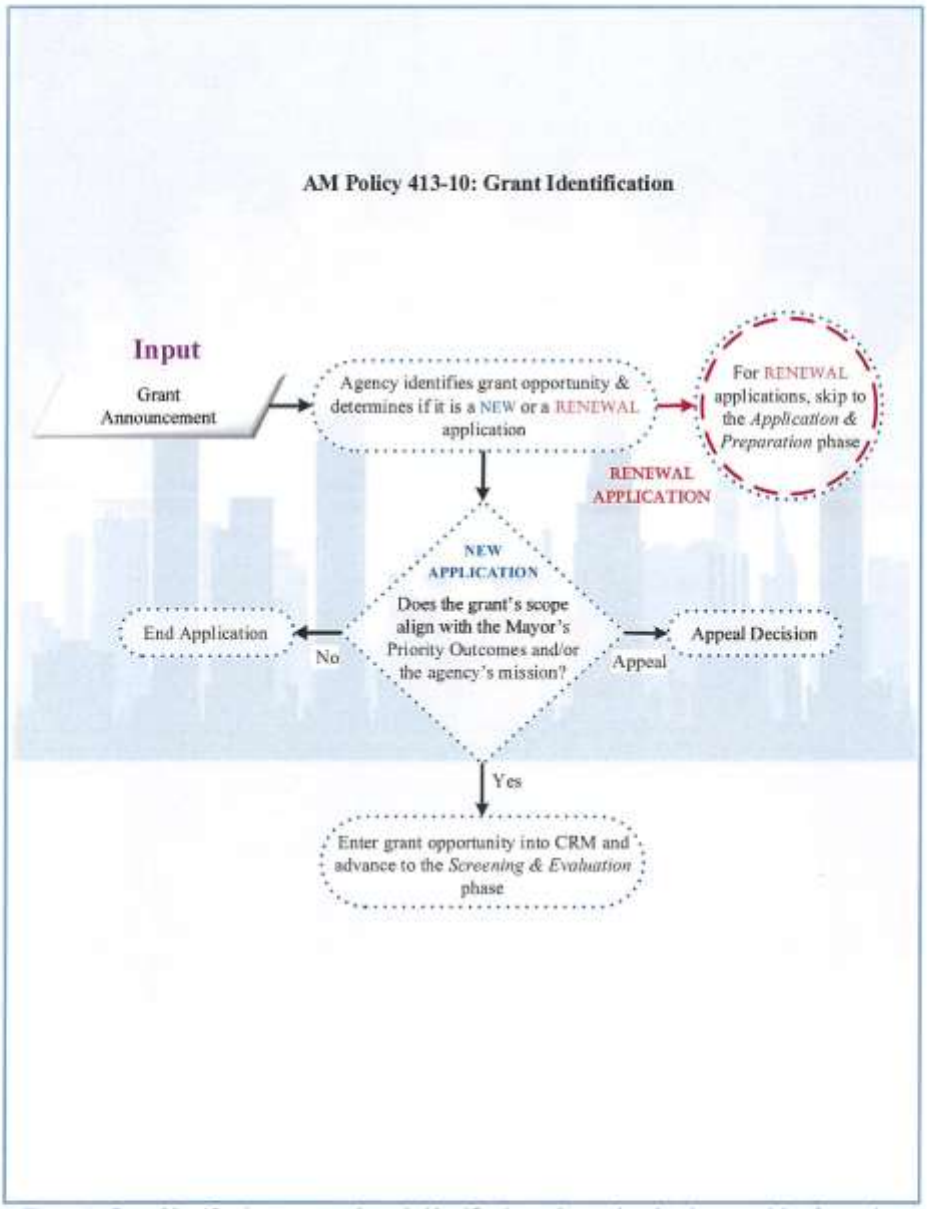

Figure 1: ***Grant Identification*** promotes the early identification and proactive planning essential to forecasting grant opportunities and capturing awards.

[redacted]

a AM 413-20

m

Grants Screening & Evaluation

PURPOSE

Preplanning and early resource gathering are key to success when screening and evaluating a grant application. This policy promotes a proactive assessment and determination of each grant's requirements to minimize confusion and maximize preparation time prior to submitting an application.

SCOPE

This policy is applicable to all City of Baltimore agencies/entities that use grant funding, as well as any other organizations for which the City serves as grantor or contributes resources. Moreover, this policy supersedes and replaces **AM 404-1 Financial Grants, AM 404-1-1 Applying for Grants** and **AM 404-1-2 Action upon Receiving Grant Approval**.

POLICY STATEMENT

This policy requires grants management staff to proactively determine all grant application requirements and compile resources when preparing a grant application, to include determining whether the grant application requires *sustainability* or *matching funds*. When questions arise regarding a Notice of Funding Availability (NOFA), Scope of Work (SOW) or a Request for Proposal (RFP) – see **Definitions**, page 3 – staff should seek clarity from the grantor as early as possible.

PROCEDURE

NOTE

- Procedural items preceded by this symbol ✓ are designated as quality issues. Failure to adhere to this requirement can impact the overall quality of this policy.
- Procedural items preceded by this symbol RISK are designated as risk issues. Failure to monitor this requirement can create an unwarranted risk.

a m

AM 413-20

Grants Screening & Evaluation

Grants Management Committee:

1. Assigns a grant proposal manager and/or budget proposal manager to compile, review and submit each grant application. This/these individual(s) must be proactive in identifying any problems or issues that may interfere with a successful grant award and/or ongoing operation;

2. Determines whether a NOFA or RFP has a sustainability or matching funds requirement. **Note:** Both the applying agency/entity and their respective Bureau of the Budget and Management Research (BBMR) Budget Analyst must review and approve in writing the Notice of Funding Availability (NOFA) and corresponding draft budget prior to submitting ***any*** grant application. The agency/entity must also,

3. Determine their eligibility to apply and decide if the funding guidelines meet the agency/entities' funding needs by thoroughly reading the NOFA or RFP. If necessary, identifies a partner to meet the SOW requirements.

Grants Manager/Grant Proposal Manager and/or Budget Proposal Manager:

4. When necessary, seeks clarity on the SOW from the grantor by completing a *Letter of Inquiry* as early as possible. Draft Letters of Inquiry can be found (or stored) on the SharePoint site, at: https://portal.baltimorecity.gov/dof/GM/SitePages/Home.aspx, in the **Forms Library**.

BBMR Budget Analyst:

5. Has two (2) workdays from the receipt of the inquiry to approve or disapprove (in writing) the submitting agency/entity's draft budget. **Note:** BBMR's draft budget template can be found in the **Forms Library** on the City's grants management SharePoint site.

Grant Proposal Manager and/or Budget Proposal Manager:

6. Identifies sub-recipient(s) and determines their funding amounts prior to an application submission. **Note:** Pre-award identification and preparation of sub-recipient agreements expedites post award startup; and,

[redacted]

a AM 413-20

m

Grants Screening & Evaluation

7. Gathers all resources required by the NOFA or RFP Scope of Work (SOW) as early as possible, to maximize the grant application's success.

DEFINITIONS

- **Notice of Funding Availability (NOFA)** - is a publicly available document by which an agency/organization makes known its intentions to award discretionary grants or cooperative agreements, usually as a result of a competition for funds; also known as a **Funding Opportunity Announcement (FOA)**.

- **Request for Proposal (RFP)** – is a solicitation to submit business proposals, often made through a bidding process to potential suppliers by an agency or company interested in procurement of a commodity or service.

- **Scope of Work (SOW)** – is a formal agreement that specifies all the criteria of a contract between a service provider (vendor) and the customer. The SOW documents the project requirements, milestones, and deliverables, i.e., products, documents and reports expected from the customer/contractor/consultant.

POLICY OWNER

The grants management office is responsible for all changes and/or updates to this policy.

WORKFLOW PROCESS

A flowchart displays workflow graphically, using some or all of the following process symbols.

PROCESS KEY

Figure 1, below, graphically displays the primary steps followed in the **Grant Screening & Evaluation** process.

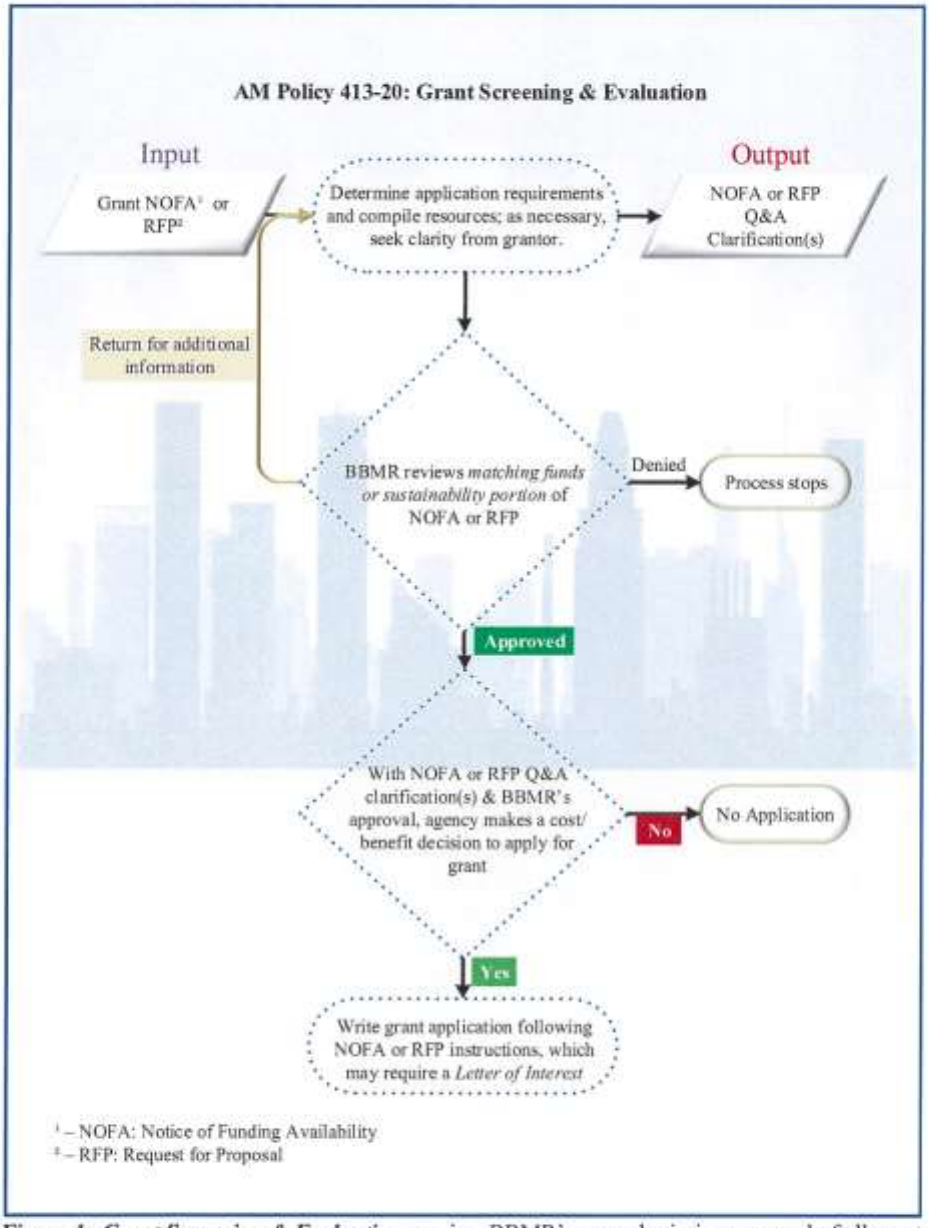

Figure 1: ***Grant Screening & Evaluation*** requires BBMR's pre-submission approval of all grant budgets.

[redacted]

a AM 413-30

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Grants Preparation & Application

PURPOSE

To generate a checklist of requirements as detailed in a Scope of Work (SOW), Notice of Funding Availability (NOFA) or Request for Proposal (RFP) and require that the grant proposal manager collaborate with the Bureau of the Budget and Management Research (BBMR) when preparing a grant application's budget proposal.

SCOPE

This policy is applicable to all city of Baltimore agencies/entities that use grant funding, as well as any other organizations for which the city serves as grantor or contributes resources. Moreover, this policy supersedes and replaces **AM 404-1 Financial Grants**, **AM 404-1-1 Applying for Grants** and **AM 404-1-2 Action upon Receiving Grant Approval**.

POLICY STATEMENT

Each city of Baltimore agency/entity that receives grant funding must form a Grants Committee to support the grant preparation and application process, (see **AM Policy 413-00, Grants Management & Administration** for a more in-depth explanation of the grant committees' role and responsibilities). The committee's leadership must ensure all requirements identified within each NOFA or RFP's Scope of Work are met and BBMR's pre-submission approval is obtained on the grant application's corresponding budget.

PROCEDURE

NOTE

- Procedural items preceded by this symbol ✓ are designated as quality issues. Failure to adhere to this requirement can impact the overall quality of this policy.
- Procedural items preceded by this symbol ▽ are designated as risk issues. Failure to monitor this requirement can create an unwarranted risk.

a AM 413-30

m

Grants Preparation & Application

Grants Management Committee:

1. Identifies and designates a grant proposal manager as early as possible to:
   - Avoid making false assumptions based on grantor feedback;
   - Overcome delays from grantor communications;
   - Avoid delays or errors in the budget approval process as well as the identification of new cost possibilities (efficiencies);
   - Avoid overextending or underestimating grant preparation capability;
   - Create redundant capabilities to ensure continuity of operations; and,
   - Maintain a timeline/calendar to track all grant preparation activity.

Grant Proposal Manager:

2. Determines application requirements as defined within the NOFA or RFP's SOW, or as defined by stakeholders, which may include the following requirements at a minimum:
   - SF-424 (Application for Federal Assistance), or equivalent State of Maryland application form;
   - DUNS/SAM #s;
   - Catalog of Federal Domestic Assistance Number (CFDA #);
   - Project Summary/Abstract;
   - Project Narrative;
   - Budget & Budget Narrative (including match requirements, if applicable);
   - Organization Chart;
   - Organizational Capacity (may require resumes);
   - Key Hires, if applicable;
   - Point of Contact (Project Director/Grant Manager);
   - Signed Certifications and if applicable;
   - Sub-recipient MOUs, letters of support or agreements.
3. Designates a grant writer(s) and/or budget proposal manager;
4. Determines grant evaluation method/process;
5. References the **Grant Support & Resources** button on the city's grants management SharePoint website for additional information on grant writing and/or budgeting;
6. Creates checklist of requirements, based on the SOW and/or stakeholder's needs, to generate an application outline and prevent submission omissions;
7. Identifies key hires as soon as possible; and,

Grants Preparation & Application

8. Checks proposal archive on the SharePoint website for previous submissions and/or supporting documentation to expedite the application process.

Grant Writer(s):

9. Drafts technical proposal based on identified requirements.

Grant Proposal/Budget Manager:

10. Determines whether a NOFA or RFP has a sustainability or matching funds requirement.

11. Using BBMR's Budget Template, compiles a draft budget for the grant and forwards it to BBMR for review.

BBMR Budget Analyst:

12. Has two (2) workdays from the receipt of the inquiry to approve or disapprove the submitting agency/entity's draft budget.

Grants Proposal Manager:

13. Works with grant writer(s) and budget proposal manager to compile the technical and budget proposal; i.e. the grant application; and,

14. Collaborates with BBMR until the grant's budget is approved or it is decided the grant application will not be pursued.

Grants Committee:

15. Supports the grant proposal manager preparing the grant application for submission.

16. The quality goal for this process is to give the grant proposal manager ample time to review and approve the grant application prior to submission to the Grants Committee and/or management for review and/or approval.

Grants Preparation & Application

Grant Proposal Manager:

17. Submits the approved grant application to management for review; reference **AM Policy413-40, Management Review**.

POLICY OWNER

The grants management office is responsible for all changes and/or updates to this policy.

WORKFLOW PROCESS

A flowchart displays workflow graphically, using some or all of the following process symbols.

PROCESS KEY

FLOW PROCESS

Figure 1 below graphically displays the primary steps followed in the **Grant Preparation & Application** process.

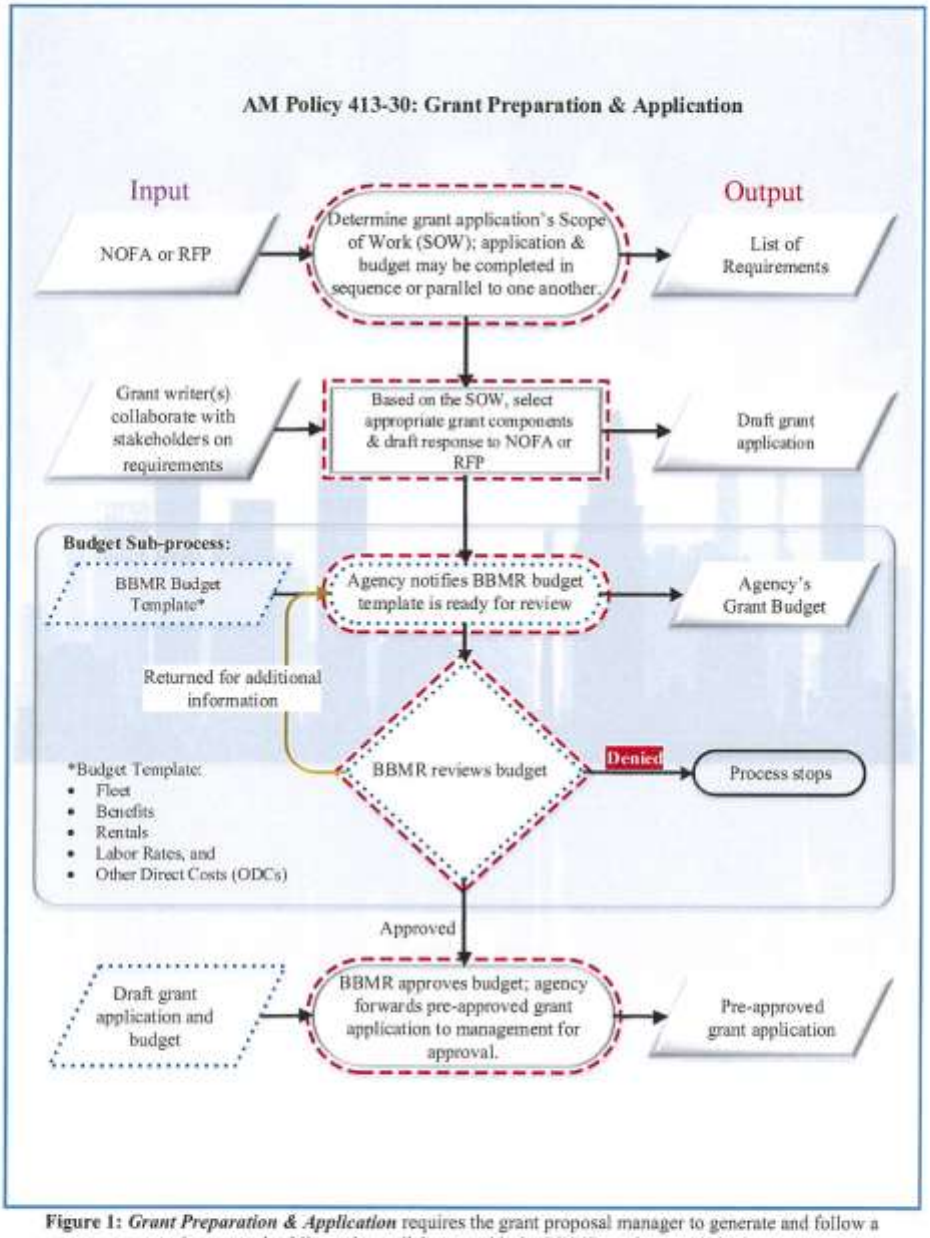

Figure 1: ***Grant Preparation & Application*** requires the grant proposal manager to generate and follow a requirements checklist and to collaborate with the BBMR on the grant's budget.

[redacted]

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AM 413-40

Grant Management Review

PURPOSE

To give management an opportunity to review and ensure the quality and completeness of *all* grant applications and supporting documentation, e.g., technical and cost proposals, prior to submission.

SCOPE

This policy is applicable to all City of Baltimore agencies and/or entities that use grant funding, as well as any other organizations for which the City serves as grantor or contributes resources. Moreover, this policy supersedes and replaces **AM 404-1 Financial Grants, AM 404-1-1 Applying for Grants**, and **AM 404-1-2 Action Upon Receiving Grant Approval**.

POLICY STATEMENT

An agency/entity's senior management must review and approve all grant applications to ensure the quality and completeness of each application - at a reasonable or specified price - prior to submission.

PROCEDURE

NOTE

- Procedural items preceded by this symbol ✓ are designated as quality issues. Failure to adhere to this requirement can impact the overall quality of this policy.
- Procedural items preceded by this symbol RISK are designated as risk issues. Failure to monitor this requirement can create an unwarranted risk.

Grant Proposal Manager:

1. Forwards the draft grant application and budget to agency's internal grants management committee (GMC) for review and approval.

Grants Management Committee (GMC):

2. Ensures grant application meets the requirements detailed in the NOFA or RFP Scope of Work or as designated by key stakeholders, prior to the agency's fiscal officer review; and,

Grant Management Review

3. If changes are required, returns draft document(s) with changes noted to the grant proposal manager for revision.

Agency/Entity's Fiscal Officer and/or Budget Proposal Manager:

4. In collaboration with the agency/entity's BBMR Budget Analyst, ensures grant application meets the requirements detailed in the Scope of Work prior to senior management's review; and,

5. If necessary, returns draft document(s) to budget proposal manager for correction or changes.

Chairperson Grants Management Committee:

6. Ensures grant application meets the requirements detailed in the Scope of Work and approves for submission;

7. If necessary, returns draft document(s) to the appropriate staff member for correction(s); and,

8. Records the name of the GMC approver and the date the grant application was approved on the CRM site, at: at https://bmore.crm9.dynamics.com/main.aspx.

Grant Proposal Manager:

9. Upon receipt of the approved application, delivers/submits grant as detailed in the Notice of Funding Availability (NOFA) or Request for Proposal (RFP);

10. Forwards a copy of the completed grant application to the grants management office and archives a copy, with all supporting documentation, in SharePoint.

POLICY OWNER

The grants management office is responsible for all changes and/or updates to this policy.

FLOW PROCESS

Figure 1, below, displays the primary steps followed in the grant review process.

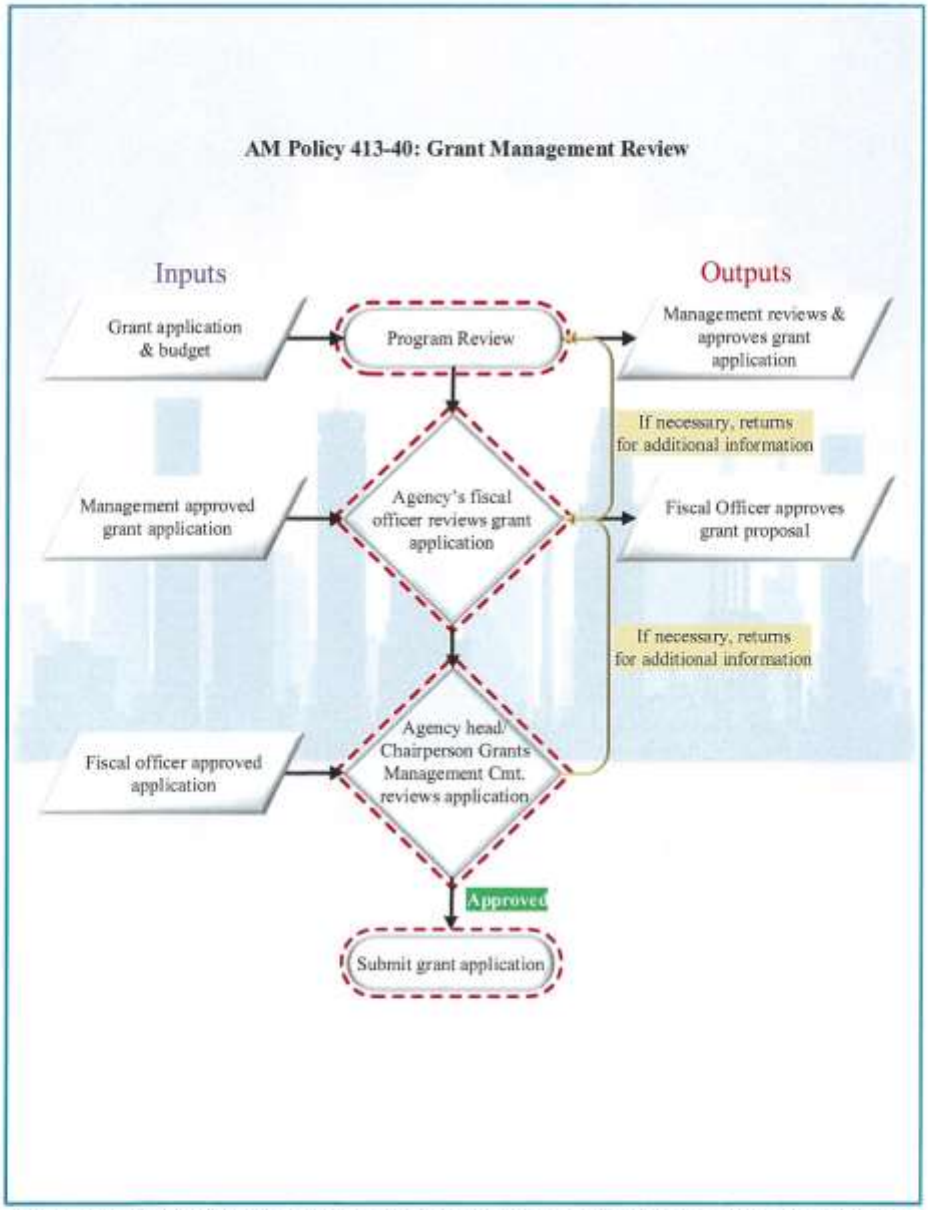

Figure 1: ***Grant Management Review*** gives management an opportunity to review all grant submissions to ensure the pre-submission quality of the grant application.

[redacted]

a AM 413-50

m

Grant Award

PURPOSE

Expediting the establishment of a budget account number allows an agency/entity to begin grant operations as soon as possible.

SCOPE

This policy is applicable to all City of Baltimore agencies/entities that use grant funding, as well as any other organizations for which the City serves as grantor or contributes resources. Moreover, this policy supersedes and replaces **AM 404-1 Financial Grants**, **AM 404-1-1 Applying for Grants**, and **AM 404-1-2 Action upon Receiving Grant Approval**.

POLICY STATEMENT

Per **AM 101-1 Request for Board of Estimates Approval**, all third party contracts and/or legal documents that bind the City must be reviewed by the law department. Therefore, post-award and prior to beginning a new grant the Law Department must review all awards for *legal form and sufficiency*. In addition, copies of the award and sub-grantee awards must be forwarded to the Department of Audits for review and endorsement. Finally, prior to beginning operations, the Board of Estimates (BOE) must approve the grant award and when applicable, all corresponding sub-recipient award(s).

PROCEDURE

NOTE

- Procedural items preceded by this symbol ✓ are designated as quality issues. Failure to adhere to this requirement can impact the overall quality of this policy.
- Procedural items preceded by this symbol RISK are designated as risk issues. Failure to monitor this requirement can create an unwarranted risk.

RISK

1. After award, an *expeditious turnaround of documentation is required* so that the grant may begin operating as quickly as possible. The primary risk to this policy is a delay in the post-award approval processes.

[redacted]

a AM 413-50

m

Grant Award

(Agency) Grant Manager:

2. Upon receipt of a grant award letter, posts award information in the CRM database. **Note:** CRM can be accessed at https://bmore.crm9.dynamics.com/main.aspx; then,

3. Following the submission guidelines outlined in **AM Policy 101-1 and AM Policy 101-1-1, Requests for Board of Estimates** forwards copies of the grant award and sub-recipient agreement(s) to the Law Department, with a courtesy copy to the appropriate Deputy Mayor.

Law Department/Agency Legal Representative:

4. Reviews the grant award and sub-recipient agreements within three (3) working days of receipt for legal form and sufficiency. If an award is lacking information, contacts grant manager for the additional information; then,

5. Forwards grant award to the Bureau of the Budget and Management Research (BBMR).

BBMR:

6. Approves grant award for funds and forwards BOE cover letter, grant award letter and sub-recipient agreement(s) to the BOE.

Department of Audits:

7. Reviews and endorses the grant award while pending submission to the BOE for approval.

Board of Estimates:

8. Approves grant award or if necessary, returns it for additional information;

9. Once approved, returns cover letter with approvals, grant award letter and/or sub-recipient agreement(s) to the grant manager.

[redacted]

a AM 413-50

m

Grant Award

(Agency) Grant Manager:

10. Typically, a scope of work (SOW), award letter and BOE approval are required to obtain a budget account number and begin work. However, occasionally – especially for grants extended beyond their original period of performance – the *grantor* may delay updating the scope of work. In these cases, the grant manager may begin operating post-BOE approval, sans scope of work, so as not to interfere with the continuity of services. It is, however, recommended that the grant manager work closely with the grantor and document their efforts to obtain a copy of the SOW within 90-days of the award;

11. Forwards copy of the BOE-approved grant award letter to the grants management office; and,

12. Posts a softcopy of the BOE-approved grant award to the CRM database.

Grants Management Office (GMO)/Bureau of Accounting & Payroll Services (BAPS):

13. Within 24-hours of receipt of the BOE-approved grant award letter, sets up the detailed fund account number in CityDynamics; then, collaborates with BAPS and BBMR to create a budget account number. **NOTE**: Budget account numbers will not be issued by the Grants Management Office without a BOE-approved award letter.

14. Returns budget account number to the grant manager to begin grant operations.

(Agency) Grant Manager:

15. Upon receipt of budget account number begins grant operations.

16. In the event of a non-award, works with agency's grants management committee to seek a debrief with the grantor so that appropriate in-house adjustments can be made to future grant applications, therefore optimizing the agency/organization/entity's chances for future awards: see **Grants Management & Administration, AM Policy 413-00: Applications**.

POLICY OWNER

The grants management office is responsible for all changes and/or updates to this policy.

a AM 413-50

m

Grant Award

WORKFLOW PROCESS

A flowchart displays workflow graphically, using some or all of the following process symbols.

PROCESS KEY

Figure 1, below, graphically displays the primary steps followed in the grant award process.

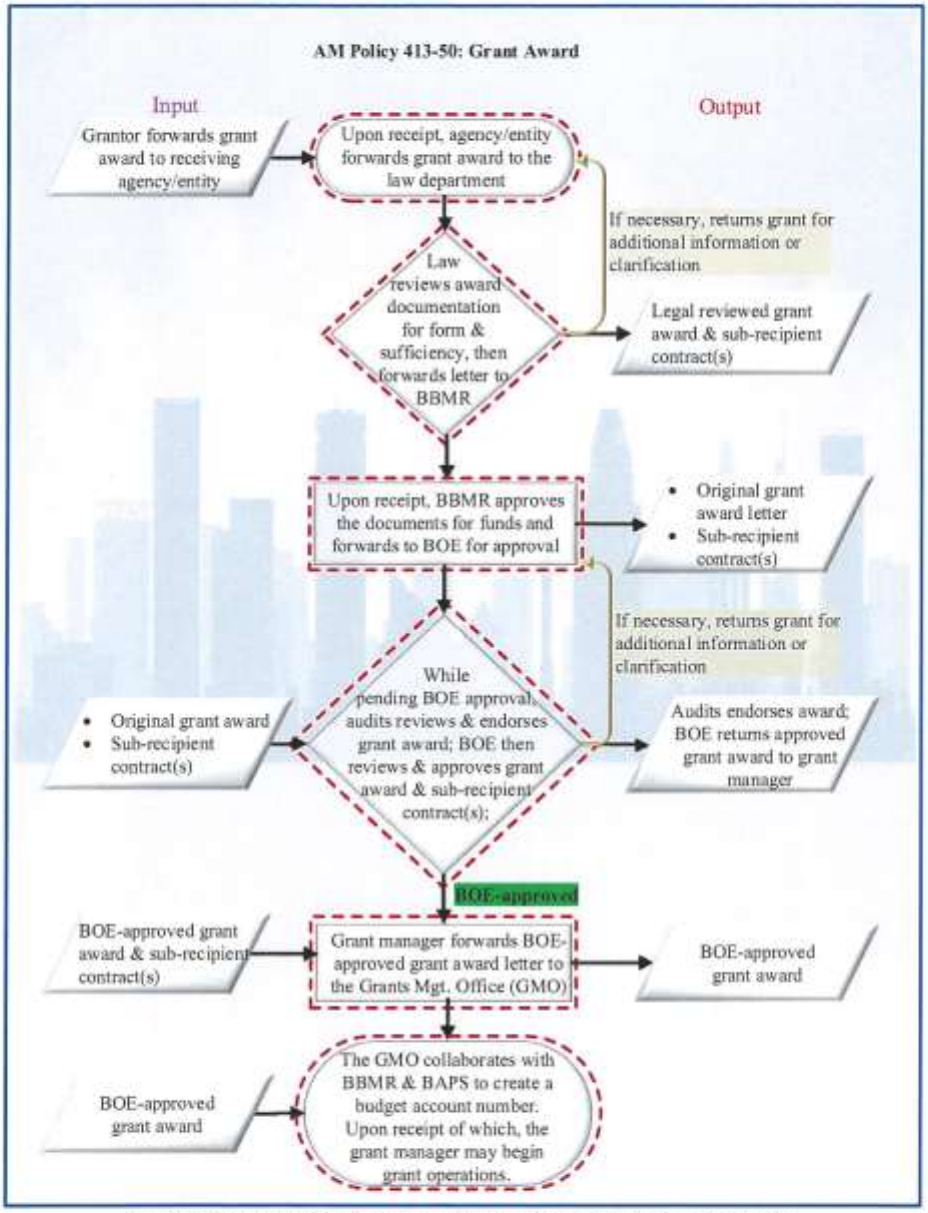

Figure 1: ***Grant Award*** details the process an award goes through after initial receipt.

[redacted]

a AM 413-60

m *Grant Documentation*

PURPOSE

Proper documentation is imperative to avoiding audit findings, disallowed costs and/or non-compliance issues.

SCOPE

This policy is applicable to all City of Baltimore agencies and/or entities that use grant funding, as well as any other organizations for which the City serves as grantor or contributes resources. Moreover, this policy supersedes and replaces **AM 404-1 Financial Grants**, **AM 404-1-1 Applying for Grants** and **AM 404-1-2 Action upon Receiving Grant Approval**.

POLICY STATEMENT

Grant management staff must conduct ongoing monitoring and control of all grant activities; to include, timely drawdowns, meeting documentation requirements, as well as the receipt and appropriate deposit of reimbursements until the grant's period of performance ends.

PROCEDURE

NOTE

- Procedural items preceded by this symbol ✓ are designated as quality issues. Failure to adhere to this requirement can impact the overall quality of this policy.
- Procedural items preceded by this symbol ⚠ are designated as risk issues. Failure to monitor this requirement can create an unwarranted risk.

Grants Management Office:

1. Upon receipt of a BOE-approved grant award from a grant manager sets up grant account number. For details on this process, reference **AM Policy 413-50 Grant Award**.

Grants Manager:

2. Upon receipt of grant account number, enters number into CRM;

[redacted]

a AM 413-60

m ***Grant Documentation***

RISK

3. Maintains an online archive of *all* grant applications, award letters, monthly, quarterly, semi-annual and annual (as required) operational and financial reports for a minimum of seven years on the grants management' SharePoint website. If necessary, online applications must be printed, scanned and stored in SharePoint;

4. To allow for easy retrieval, stores all documentation in SharePoint using the following folder naming convention:

Budget Series Code - Grant Year - Granting Agency/Grantor - Grant Name

For example: **4001-16-DOJ-Byrne Justice Grant**

5. After the grant account and archive are established, completes staff hiring process (as necessary);

6. Completes applicable procurement/purchasing needs;

7. Notifies stakeholders (sub-recipients) of the grants start date, expectations, and requirements;

RISK

8. Conducts ongoing monitoring and control of all reimbursement receipts and deposits until grant ends; as well as all program and sub-recipient (when applicable) documentation, to include:
   a. Program documentation
   b. Timesheets
   c. Deliverables
   d. Activities
   e. Vendor payments
   f. Program data/charts/numbers
   g. Financial and compliance reports

9. Establishes and maintains a hardcopy audit file as a desk reference. This file should include:
   a. Federal System Registrations: SAM; DUNS #s, Grants.gov information;
   b. Federal Financial Accountability and Transparency (FFATA) information;
   c. FFR Submissions (SF-425 Federal Financial Report);
   d. Grant Agreements; and,
   e. Prior Year Single Audits/Monitoring Reports.

[redacted]

a AM 413-60

m *Grant Documentation*

RISK 10. Failure to maintain all documentation and/or or financial submissions can result in audit findings and/or disallowed costs.

11. Moves to **AM Policy 413-70, Grant Closeout** once a grant's period-of-performance has concluded; or,

12. Returns to **AM Policy 413-10, Grant Identification** if the grant is to be renewed.

POLICY OWNER

The grants management office is responsible for all changes and/or updates to this policy.

FLOW PROCESS

Figure 1, below, displays the primary steps followed in the grant documentation process.

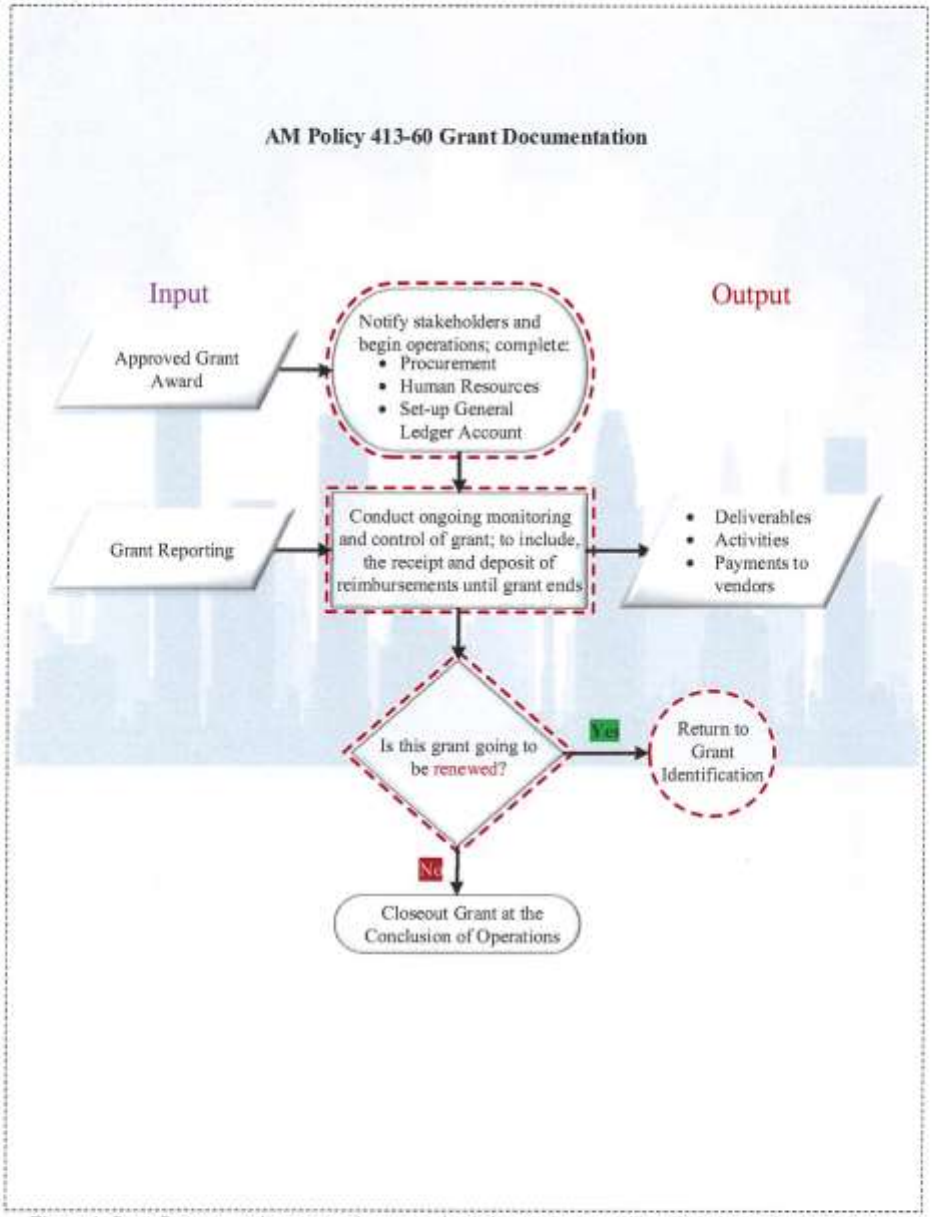

Figure 1 ***Grant Documentation***, proper documentation is imperative to avoid audit findings, disallowed costs and/or non-compliance issues.

[redacted]

a AM 413-61

m

Grant Management Financial Reporting

PURPOSE

To establish a citywide financial reporting approach for all grants that is accurate and allowable based on the specific terms and conditions of each grant, and reviewed and approved by appropriate City of Baltimore supervisory personnel.

SCOPE

This policy applies to all City of Baltimore agencies and/or entities that use grant funding, as well as any other organizations for which the City serves as grantee or contributes resources. Moreover, this policy supersedes **AM 404-1 Financial Grants**, **AM 404-1-1 Applying for Grants**, and **AM 404-1-2 Action upon Receiving Grant Approval**.

POLICY STATEMENT

Each agency/entity that receives grant funding must ensure that all periodic financial reporting, be it monthly, quarterly, annually, etc., meets the terms and conditions of the grant's scope of work, be within budget, and have been accrued during the grant's period of performance.

PROCEDURE

NOTE

- Procedural items preceded by this symbol ✓ are designated as quality issues. Failure to adhere to this requirement can impact the overall quality of this policy.
- Procedural items preceded by this symbol ⚠ are designated as risk issues. Failure to monitor this requirement can create an unwarranted risk.

Program Manager/Director (Pre-award):

1. Prior to applying for a grant, in collaboration with the agency's fiscal supervisor, the grant budget proposal manager and (BBMR) budget analyst create a summary of special terms or conditions as well as a budget and allowable costs, as detailed in **Administrative Manual (AM) Policy 413-30, Grants Preparation & Application**; to include any spending restrictions, required matches or in-kind contributions.

[redacted]

a AM 413-61

m

Grant Management Financial Reporting

Grant Manager/Sub-recipient (Post-award):

2. Expend funds as detailed within the grant award's approved budget; forwarding all receipts and invoices of charges against the grant for review and approval to the agency/entity's fiscal officer.

(Agency) Fiscal Officer:

3. Upon receipt of financial documentation reviews all invoices and supporting documentation for appropriateness against the grant's approved budget. This review must include an analysis that ensures any percentages, matches, and/or in-kind contributions associated with the expenditures of the grant are consistent with the allowable expenses under the grant.

4. Forwards screened and approved invoices and receipts to the Bureau of Accounting and Payroll Services (BAPS) for payment.

Bureau of Accounting and Payroll Services (BAPS):

5. Reviews all submissions for payment for consistency by comparing the request for payment to the receipts received.

6. Posts expenditures to the grant ledger and safeguards the information.

7. Once BAPS has closed the month (which generally happens on the fifth the day of the next month) reporting is available to all agencies. Each agency/entity can run reports from the City's financial management system for sign-off by their supervisors.

Grant Manager/Program Manager/Director:

8. Maintains all documentation, either electronic or hard copy, for all federally funded grants for the term of the grant for a minimum of seven years for review and audit by the granting agency or its designee; see **AM Policy 413-60: Grant Documentation**.

[redacted]

a AM 413-61

m

Grant Management Financial Reporting

POLICY OWNER

The grants management office is responsible for all changes and/or updates to this policy.

WORKFLOW PROCESS

A flowchart displays workflow graphically, using some or all of the following process symbols.

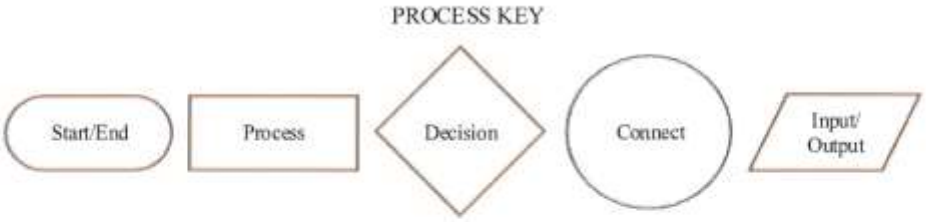

Figure 1, below, graphically displays the primary steps followed in the grant award process.

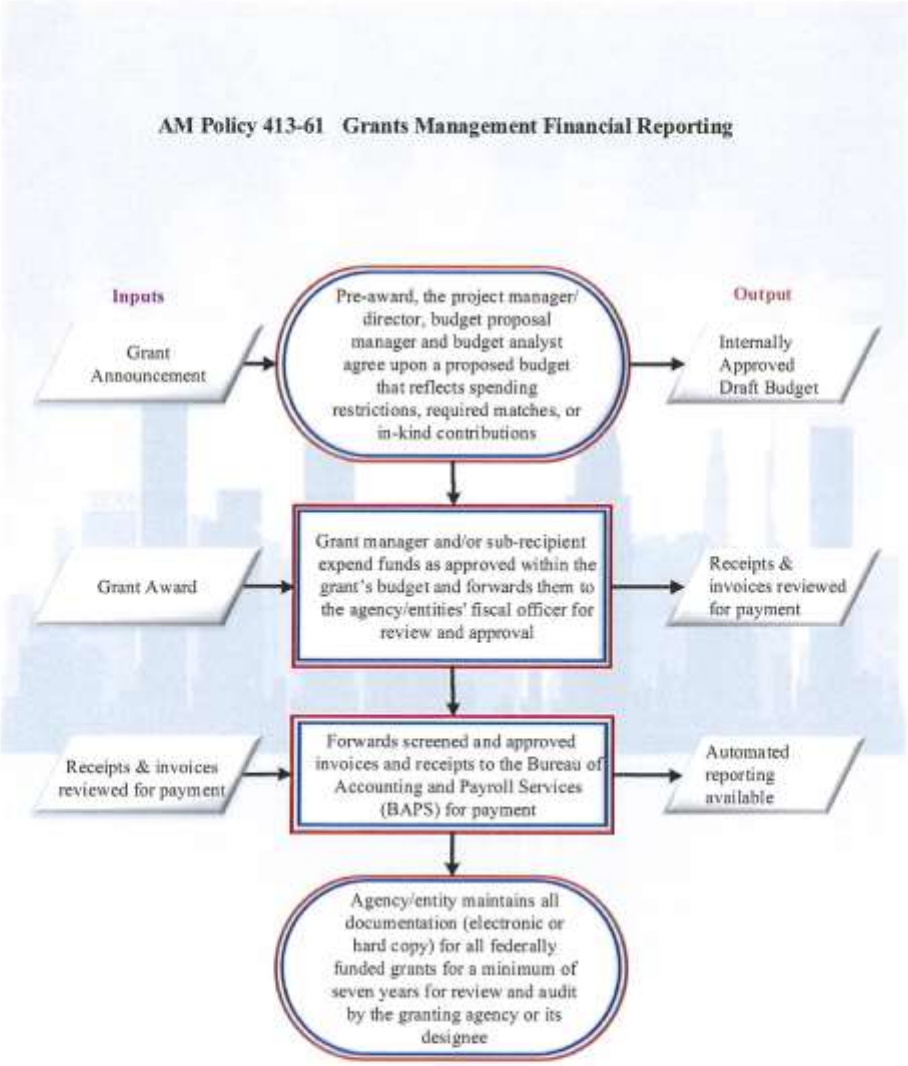

Figure 1: *Grants Management Financial Reporting* reflects the requisite steps to ensure all incurred costs are within budget and allowable.

[redacted]

a AM 413-70

m *Grant Closeout*

PURPOSE

To ensure a proper and timely closeout of all grants that are ending and to identify grants that should be renewed.

SCOPE

This policy is applicable to all City of Baltimore agencies/entities that use grant funding, as well as any other organizations for which the City serves as a grantor or contributes resources. Moreover, this policy supersedes and replaces **AM 404-1 Financial Grants**, **AM 404-1-1 Applying for Grants**, and **AM 404-1-2 Action Upon Receiving Grant Approval**.

POLICY STATEMENT

To ensure all primary accounts and subaccounts related to each grant are closed within 45-days of the grant's end-date and that any receipts or invoices received after the grant's ending-date, occurred within the grant's period-of-performance.

PROCEDURE

NOTE

- Procedural items preceded by this symbol ✓ are designated as quality issues. Failure to adhere to this requirement can impact the overall quality of this policy.
- Procedural items preceded by this symbol ▽ are designated as risk issues. Failure to monitor this requirement can create an unwarranted risk.

Grant Manager:

1. Determines if a grant will be ending or renewed. For renewals, refer to **AM Policy 413-10, Grant Identification**;

2. Pulls together detail of the grant's financial transactions, program narrative and/or required grantor closeout information. This checklist should include, at a minimum:
   a. Approved grant budget;
   b. Grant fund budget analytics (including General Ledger records);
   c. Copies of invoices, receipts, canceled checks, and/or purchase orders;
   d. Approved budget reallocations;
   e. Print-out of grantee's expenditure/receipt reports;

f. Grant drawdown records;
g. Copies of contracts, invoices, receipts, etc. (sub-recipients/consultants); and,
h. Relevant Federal, State, foundation and other financial reports

3. Completes an Internal Closeout Checklist to ensure all activities and transmittals have been completed, documented and submitted timely. The Internal Closeout Checklist should include, at a minimum:
   a. A copy of the executed grant agreement (grantor's and sub-recipient's);
   b. Program performance reports;
   c. Sub-recipient monitoring reports;
   d. Germaine Federal, State, foundation and/or other financial reports;
   e. Environmental Review Records and Clearances; and,
   f. Davis Bacon documentation and other labor records (if applicable).

4. Prepares final Grant Summary Report based on Internal Closeout Checklist results/findings; and,

5. Submits Grant Summary Report to grantor.

Grantor:

6. Audits grant (as deemed necessary). Annually, the City prepares and submits a Single Audit Report to the appropriate federal agencies as part of the City's overall audit; to include:
   a. SF-SAC – Federal Audit Clearinghouse Report, as well as,
   b. All non-Federal grantor's audit requirements.

Grant Manager:

7. May receive notification of a grant's imminent ending and/or a final report from the grantor;

8. Makes sure all primary account and subaccounts related to the grant are closed within 45-days following the grant's end-date. Any receipts or invoices received after the grant's end-date must have been incurred within the grant's period of performance;

9. Maintains ongoing communications with the Bureau of Accounting & Payroll Services (BAPS), Auditing, the Bureau of the Budget Management Research (BBMR) and Grants Management Office (GMO) to further ensure ongoing fiscal integrity; and,

10. Archives all grant documentation along with the original grant application in SharePoint, as prescribed in **AM Policy 413-60, Grant Documentation: Grants Manager**.

Grants Management Office:

RISK 11. Deactivates all expired grant accounts to avoid ongoing charges against a grant that has ended to eliminate the possibility of disallowed costs and/or inappropriate expenditures to the Grants Revenue Fund.

POLICY OWNER

The grants management office is responsible for all changes and/or updates to this policy.

FLOW PROCESS

Figure 1, below, graphically displays the primary steps followed in the grant closeout process.

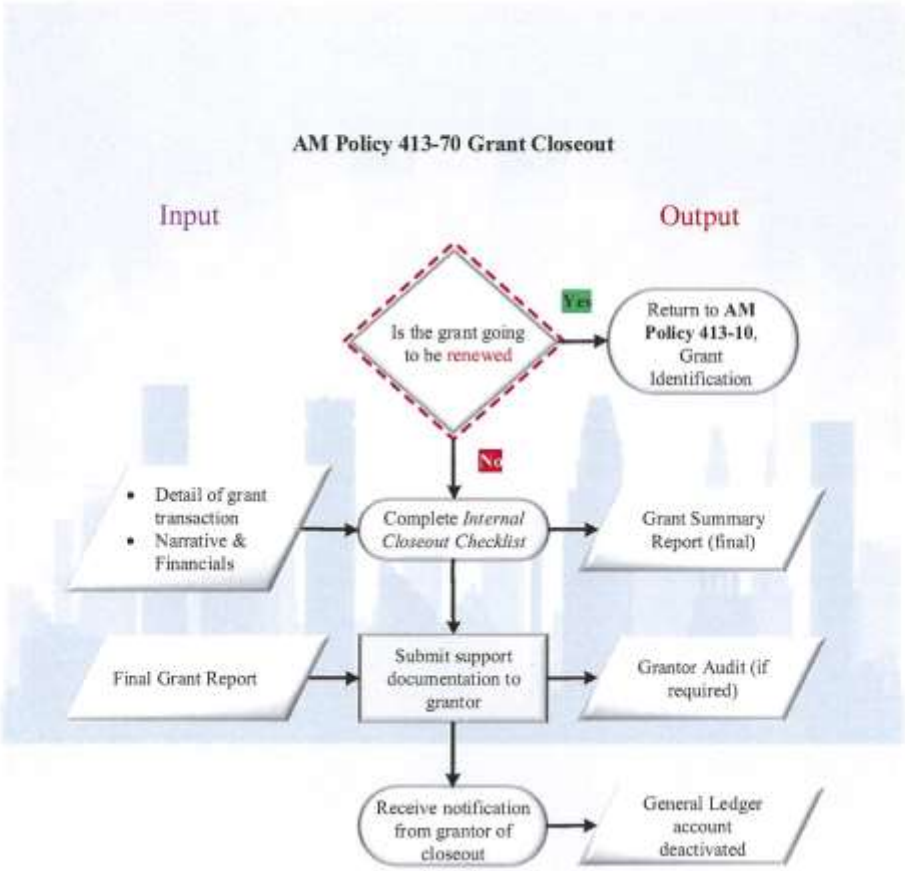

Figure 1: ***Grant Closeout***, a timely and thorough closeout of all grants helps to ensure fewer audit findings and better overall compliance.

Department of Finance – cont'd

UPON MOTION duly made and seconded, the Board approved the Revised Administrative Manual Policies AM 413-00, AM 413-10, AM 413-20, AM 413-30, AM 413-40, AM 413-50, AM 413-60, AM 413-61 and AM 413-70.

TRAVEL REQUESTS

Name	To Attend	Fund Source	Amount
Mayor's Office			
1. Catherine E. Pugh	2017 ICSC RECon Las Vegas, NV May 21 – 23, 2017 (Reg. Fee $0.00)	General Funds	$1,984.17

The subsistence rate for this location is $166.00 per night. The cost of the hotel is $295.00 per night. The hotel taxes are $44.15 per night, plus a resort fee of $35.00 per night. The Department is requesting additional subsistence of $129.00 per day to cover the cost of the hotel and $40.00 per day for meals and incidentals. Ms. Pugh is now a member of the ICSC, therefore, no additional costs is incurred for her registration.

The airfare in the amount of $1,095.87, hotel costs of $848.30, hotel taxes of $88.30, and the resort fees of $70.00 have been prepaid using a City-issued procurement card assigned to Ms. Renee Newton. Therefore, Ms. Pugh will be disbursed $140.00.

2. Afra Vance-White	2017 ICSC RECon Las Vegas, NV May 21 – 23, 2017 (Reg. Fee $610.00)	General Funds	$2,594.17

The subsistence rate for this location is $166.00 per night. The cost of the hotel is $295.00 per night plus taxes of $44.15 per night and resort fee of $35.00 per night. The Department is requesting additional subsistence of $129.00 per day to cover the cost of the hotel and $40.00 per day for meals and incidentals.

TRAVEL REQUESTS

	Name	To Attend	Fund Source	Amount
	Mayor's Office – cont'd			
	The registration fee of $610.00, transportation costs of $1,095.87 and hotel costs of $748.30 for Ms. Vance-White was prepaid using a City-issued procurement card assigned to Renee Newton. Therefore, the amount to be disbursed to Ms. Vance-White is $140.00.			
3.	Colin Tarbert	2017 ICSC Recon Las Vegas, NV May 21 – 24, 2017 (Reg. Fee $0.00)	General Funds	$2,161.32
	The subsistence rate for this location is $166.00 per night. The cost of the hotel is $295.00 per night, plus hotel taxes of $44.15 per night and a resort fee of $35.40 per night. The Department is requesting additional subsistence of $129.00 per day to cover the cost of the hotel and $40.00 per day for meals and incidentals.			
	The airfare cost of $858.87 and hotel cost of $295.00 per night were prepaid using a City procurement card assigned to Renee Newton. Therefore, the amount to be disbursed to Colin Tarbert is $180.00.			
	Finance – Treasury Management			
4.	Jennell Rodgers	Public Finance Management Fundamentals of Public Finance Philadelphia, PA June 5 – 9, 2017 (Reg. Fee $0.00)	General Funds	$1,238.82

TRAVEL REQUESTS

	Name	To Attend	Fund Source	Amount
Department of General Services				
5.	Berke Attila Benjamin Brosch*	GFOA 111th Annual Conference Denver, CO May 20 – 24, 2017 (Reg. Fee $380.00) (Reg. Fee $425.00)*	Internal Service Funds General* Funds	$4,322.44

The registration costs of $380.00 and transportation costs of $591.96 were prepaid using City-issued procurement card assigned to Berke Attila. Therefore, the disbursement to Mr. Attila is $1,178.25.

The registration costs of $425.00 and transportation costs of $558.95 were prepaid using City-issued procurement card assigned to Berke Attila. Therefore, the disbursement to Mr. Brosch is $1,188.28.

Baltimore Police Department				
6.	Stephanie Uruchima Helen Mateo Kerry Snead*	12th Annual Conference on Crimes Against Women May 21 – 25, 2017 (Reg. Fee $460.00) (Reg. Fee $460.00) (Reg. Fee $490.00)*	SORU Grant	$4,355.09

The registration costs of $460.00 and transportation costs of $709.46 were prepaid using City-issued procurement card assigned to Tribhuvan Thacker. Therefore, the disbursement to Mr. Uruchima is $989.12.

TRAVEL REQUESTS

Name	To Attend	Fund Source	Amount

Baltimore Police Department – cont'd

The registration costs of $460.00 and transportation costs of $709.46 were prepaid using City-issued procurement card assigned to Tribhuvan Thacker. Therefore, the disbursement to Ms. Mateo is $997.05.

The registration costs of $490.00 and transportation costs of $709.46 were prepaid using City-issued procurement card assigned to Tribhuvan Thacker. Therefore, the disbursement to Ms. Snead is $989.12.

Department of Transportation

7.	Sandra A. Byrd	US Equal Employment Opportunity Excel Conference Chicago, IL June 26-30, 2017 (Reg. Fee $1,500.00)	General Fund	$3,225.90

The registration fee in the amount of $1,500.00 was prepaid by City-issued procurement card assigned to Dhirendra Sinha. The amount to be disbursed to Ms. Byrd is $1,725.90.

Department of Communication Services

8.	Perin Tinsley Charmaine Callahan*	2017 National Postal Forum Baltimore, MD May 21 – 24, 2017 (Reg. Fee $825.00)*	Internal Service	$ 825.00

TRAVEL REQUESTS

Name	To Attend	Fund Source	Amount

Department of Communication Services – cont'd

The registration fee for Ms. Callahan was paid under EA000206524. No other funds are requested. The National Postal Forum has provided Mr. Tinsley with complimentary registration.

UPON MOTION duly made and seconded, the Board approved the foregoing Travel Requests. The Mayor **ABSTAINED** on item nos. 1, 2 and 3.

MINUTES

Department of Public Works/Office – Amendment No. 1 to Agreement of Engineering and Construction

ACTION REQUESTED OF B/E:

The Board is requested to approve and authorize execution of Amendment No. 1 to the Agreement for Project 1402, On-Call Project and Construction Management Assistance Services with Rummel Klepper & Kahl, LLP (RK&K), and an increase of the upset limit from $4,000,000.00 to $5,000,000.00. The Amendment No. 1 to Agreement will extend the period of the agreement through December 10, 2018.

AMOUNT OF MONEY AND SOURCE:

$1,000,000.00 - The amount of money and source will be determined with each individual task. No funds are required at this time.

BACKGROUND/EXPLANATION:

The completion of the Patapsco Enhanced Nutrient Removal (ENR) Projects is subject to a December 31, 2016 consent decree deadline imposed by the Maryland Department of the Environment. The Patapsco ENR Projects (Sanitary Contract No. 845R, Nitrification Filters Related Work for the Enhanced Nutrient Removal Facilities at Patapsco Wastewater Treatment Plant and Sanitary Contract No. 852R, Denitrification Filters Related Work for the Enhanced Nutrient Removal Facilities at Patapsco Wastewater Treatment Plant) have been delayed by disputes with the existing contractor over the correction of identified quality control deficiencies. The most significant of these disputes concerns the quality of welds on process piping at the Patapsco ENR Projects.

The DPW has repeatedly directed the existing contractor to take corrective action, but it has not done so to the satisfaction of the DPW. The lack of resolution of this dispute, together with other issues, has delayed the project past the consent decree deadline. At this time, the DPW is taking every measure necessary to complete the Patapsco ENR Projects as quickly as possible and at the level of workmanship contemplated by the contract. The delays to the completion have subjected the City to potential fines from the Maryland Department of the Environment (MDE).

MINUTES

Department of Public Works/Office – cont'd
of Engineering and Construction

To minimize further delays to the completion of the ENR projects (SC 845R and 852R), it is imperative that the City retain the services of a supplemental contractor to investigate, repair, and/or replace deficient work identified by the City.

The purpose of this request is to provide time and money for Task 22. The proposed Task #22 (to be issued by the agency) is an important and concurrent component in supporting the effort of SC 961 Emergency Construction Services (Phase 2) with additional inspections and project management support. The services to be provided by RK&K in Task 22 are within the existing scope of work in on-call Contract 1402. The Office of Engineering and Construction is utilizing MBE and WBE consultants from the current contract in a major role for this task. Accurate documentation is paramount towards the goal of back-charging the existing contractor for this overall rework effort.

Since time is of the essence, and the Office of Engineering and Construction does not have available personnel with the necessary experience, the City must engage RK&K inspection and project management personnel to provide the services needed for Task 22.

IT IS HEREBY CERTIFIED THAT PURSUANT TO ARTICLE VI, §11(e)(i) OF THE CHARTER, THE EMERGENCY IS OF SUCH A NATURE THAT NO ADVANTAGE WILL RESULT IN SEEKING, OR IT IS NOT PRACTICABLE TO OBTAIN, COMPETITIVE BIDS. ON A MEMO DATED JULY 06, 2016, THE DIRECTOR OF FINANCE APPROVED THE REQUEST OF THE DIRECTOR OF THE DEPARTMENT OF PUBLIC WORKS TO RETAIN A SUPPLEMENTAL CONTRACTOR FOR THIS WORK.

MBE/WBE PARTICIPATION:

The vendor will comply with Article 5, Subtitle 28 of the Baltimore City Code and the MBE and WBE goals assigned to the original agreement of 27% and 10%.

Department of Public Works/Office – cont'd
of Engineering and Construction

AUDITS NOTED THE TIME EXTENSION.

AUDITS NOTED THE INCREASE IN THE UPSET LIMIT.

AUDITS NOTED THIS ON-CALL AGREEMENT AND WILL REVIEW TASK ASSIGNMENT

A PROTEST WAS RECEIVED FROM MARTIN HILDA, P.A. ON BEHALF OF BALFOUR BEATTY INFRASTRUCTURE, INC. AND ITS DIVISION FRU-CON CONSTRUCTION.

UPON MOTION duly made and seconded, the Board **DEFERRED** Amendment No. 1 to the Agreement for Project 1402 until May 31, 2017.

MARTIN | HILD, P.A.
ATTORNEYS AT LAW

GREGORY S. MARTIN*
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CA: 949-605-6138
E: GSM@MARTINHILD.COM
*MEMBER OF THE FLORIDA BAR
*MEMBER OF THE CALIFORNIA BAR

May 16, 2017

VIA HAND DELIVERY

Board of Estimates
c/o Clerk of the Board
204 City Hall
100 N. Holliday Street
Baltimore, MD 21202

Reference: Sanitary Contract 852R & 845R
Subject: Written Protest
Amendment #1 to Agreement of Engineering and Construction
Project 1402 (Rummel, Klepper & Kahl, LLP)

Dear Members of the Board,

We represent Balfour Beatty Infrastructure, Inc. and its division Fru-Con Construction (hereinafter "BBII/FC") and as well as its sureties, Travelers Casualty and Surety Company of America and Fidelity & Deposit Company of Maryland ("852 Co-Sureties") and Travelers Casualty and Surety Company of America, Fidelity & Deposit Company of Maryland, Zurich American Insurance Company, Liberty Mutual Insurance Company and Federal Insurance Company ("845 Co-Sureties"). BBII/FC is the general contractor for the SC 852R and SC 845R projects ("Projects"). BBII/FC and its sureties respectfully submit this Written Protest to the proposed Amendment #1 to Agreement of Engineering and Construction for the reasons set forth below. BBII/FC and its sureties request the opportunity to be heard on this Protest at the May 17, 2017 Board of Estimates meeting. Specifically, BBII/FC and its sureties object to the proposed Amendment #1 because, as more fully set forth below, it will delay the Projects by one year; cost taxpayers unjustified expenses; and, subject BBII/FC and its sureties to unwarranted damage claims from the City, all for work which is unnecessary and not needed.

First it would be prudent to provide the Board with some background.[1] Rummel, Klepper & Kahl, LLP ("RKK") is the design engineer for both the SC 852R and SC 845R Projects. With respect to the SC 852R Project, RKK failed to properly design the concrete structure, among other things. Specifically, RKK designed a concrete keyway which cracked when subjected to expected loading of the various components of the structure which resulted in significant water leaks. BBII/FC first brought RKK's deficient design to OEC's attention in 2012. From that time until August 2016, OEC and RKK blamed BBII/FC for the extensive leaks and the more than 3-year delay to completion of the SC 852R Project. Notably, at some point, the City retained the services of a forensic engineer Rath, Rath, & Johnson ("RRJ")) to review and evaluate RKK's structural design. In August 2016, the City provided BBII/FC with a copy of RRJ's report. *See* **Attachment 1**, RRJ's August 19, 2016 Report.

[1] BBII can provide a full and detailed explanation of the events that occurred on the Projects concerning this matter upon request.

In its report, RRJ states plainly that RKK's design is severely deficient, flawed and the direct cause of extensive leaks throughout the SC 852R structure.

> **Joints and Shear Keys**
>
> The shear keys at joints within the DNF structure were designed without Code-prescribed capacity to resist the expected shear demands. This improper design has caused joint cracking and subsequent joint leakage.
>
> It is RRJ's opinion that RK&K is responsible for the majority of joint repair costs because of its failure to provide a Code-compliant design to transfer shear forces and control leakage at the keyed joints. Fru-Con should be responsible for a portion of joint repair costs because its poorly constructed joints likely contributed to the severity of the cracking and leaking. A detailed analysis of repair costs and allocations is beyond the scope of this report.

Although RRJ attempts to place some responsibility on BBII/FC, RRJ's statements concerning construction deficiencies were fully addressed in BBII/FC's response. *See* **Attachment 2**, September 15, 2016 letter, FC-BC-345. In short, any construction deficiencies were remedied during the course of construction, are typical for this type of work, and are not the cause of the extensive leaking of the facility.

On March 9, 2017, RRJ issued a Supplemental Report to report its findings based upon computer modeling RRJ performed on RKK's design. *See* **Attachment 3**, RRJ's March 9, 2017 Supplemental Report. In its Supplemental Report, RRJ confirmed its earlier findings that RKK's design is severely deficient, flawed, and the direct cause of the leaks. In fact, RRJ concluded that RKK's design would cause the structure to crack and leak irrespective of how it was constructed. Based upon the findings of the City's independent engineer, RKK is fully responsible for the delays associated with the SC 852R Project. Because it is the City's designer that is directly responsible for the delays, the City is improperly withholding nearly $13 million in liquidated damages from BBII/FC.[2]

With respect to the Sanitary Contract 961 ("SC 961") element of this Amendment #1 authorization for RKK, the City issued SC 961 purportedly to address rework of alleged field welding deficiencies on the Projects. Any concerns about the integrity of the field welds, though, should be directed at RKK for its design, and not to BBII/FC. BBII/FC performed the field welding work as required and to the standards set forth in the design RKK provided under the respective SC 852R and SC 845R Projects.

[2] BBII/FC has other time extension requests pending on both Projects directly related to RKK's woefully inadequate design which have been fully documented during the course of the Project, but which have essentially gone unanswered by OEC. Notwithstanding those time extension requests, the City has withheld over $26 million in liquidated damages from BBII/FC without giving BBII/FC any opportunity to be heard on its claims concerning RKK's deficient design. BBII/FC will make copies of these claims available at the Board's request.

To confirm the integrity of the field welds and the work BBII/FC performed, BBII/FC retained the services of Mr. Walter Sperko, P.E., an expert in welding engineering. Mr. Sperko graduated from the University of Notre Dame in 1968 with a degree in engineering and in 1969 with a bachelor of science in Metallurgical Engineering and Materials Science. Mr. Sperko began his career as a material engineer in 1969 and subsequently founded Sperko Engineering in 1981, providing engineering consulting services to clients in the metal fabrication industry and specifically advising in the areas of welding, metallurgy, manufacturing processes, piping design, inspection, and quality assurance. Mr. Sperko is also a Codes Committee Member for the American Welding Society and on the committee and subcommittees for several American Society of Mechanical Engineers ("ASME") boards regarding welding and pipe codes and standards. He is well regarded in the welding industry and attains a deep knowledge of the welding processes and procedures for technical adequacy and code conformance.

After his site visit and review of the Contracts and other related documents, Mr. Sperko issued a report concluding that the field welds on the Projects were in complete compliance with the Specification requirements.[3] Moreover, Mr. Sperko advised the welds were suitable for their intended purpose as the possibility of leaks in the air pipes were negligible and the possibility of leaks and corrosion at the water pipe joints were minimal (Mr. Sperko's report is attached hereto as **Attachment 4**). Additionally, BBII/FC successfully pressure tested the pipe systems which required the piping system to withstand 150% of the working pressure at a minimum of 150 pounds per square inch (psi). In other words, OEC's pursuit of the remedial contract SC 961 and this Amendment #1 to RKK's on-call contract is a complete waste of money.

Notwithstanding the compliant field welds, but in an effort to allay OEC's stated concerns regarding the integrity of the field welds, BBII/FC submitted a proposal to the OEC that included installing Depend-o-Lok pipe couplers over each of the "questionable" welds – a "belt and suspenders" approach. These pipe couplers are permitted under the Specifications to join stainless steel pipe. BBII/FC's Depend-o-Lok solution would cost approximately $200,000 as compared to the $1 million OEC wants to give to RKK and the reported $8 million OEC wants to spend to investigate and replace all of the field welds. Nevertheless, OEC rejected BBII/FC's proposed solutions without a sound engineering basis to do so (BBII/FC's proposal is attached hereto as **Attachment 5**).

BBII/FC reemphasizes that the field welds on the Project satisfy the Contract requirements; *i.e.*, RKK's design. While the welds and piping systems work as intended, any continuing concerns about the integrity of the welds is a design issue for RKK. Moreover, the welds do not adversely impact the plant's operations or endanger the safety of the workers. There is no possibility of a catastrophic failure occurring through the air or water pipes. There is no engineering reason to spend taxpayers' dollars on "remediating" field welds that perform and comply with the Specifications. Respectfully, the worst that can happen is a hissing from the air pipes or dripping from the water pipes and BBII/FC has already proposed a solution to that

[3] Mr. Sperko did report some minor mismatch of the alignment of two pipes which BBII/FC has since corrected.

possibility which costs significantly less than the RKK Amendment #1 extension and the reported $8 million for the SC 961 contract. There are no legitimate engineering concerns about the integrity of the welds. Accordingly, any extension of RKK's contract or the SC 961 contract is entirely unnecessary and amounts to economic waste for the City of Baltimore and its taxpayers.

Notably, both the RKK proposed Amendment #1 extension and the report increase in the SC 961 contract will significantly delay the completion of the Projects and unreasonably expose BBII/FC and its sureties to additional damage claims from the City. Currently, both Projects will be ready to receive treatable water June 1, 2017 and to begin performance testing.

For these reasons, BBII/FC and its sureties respectfully request the Board reject the proposed Amendment #1 to RKK's on-call contract.

Sincerely,

/s/ *Gregory S. Martin*

Gregory S. Martin

GSM/ndb
Enclosure

ATTACHMENT 1

EVALUATION OF CONCRETE CONSTRUCTION DEFICIENCIES

PATAPSCO WASTE WATER TREATMENT PLANT DENITRIFICATION STRUCTURE

BALTIMORE, MARYLAND

Prepared For:

Mr. William Michael Mullen
Baltimore City Law Department
100 North Holliday Street
Suite 101
Baltimore, Maryland 21202

Prepared By:

Raths, Raths & Johnson, Inc.
500 Joliet Road, Suite 200
Willowbrook, Illinois 60527-5618
630.325.6160
www.rrj.com

RRJ 14099

August 19, 2016

8-19-2016

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 14569, Expiration Date: September 2, 2017.

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APPENDED

EVALUATION OF CONCRETE CONSTRUCTION DEFICIENCIES
PATAPSCO WASTE WATER TREATMENT PLANT DENITRIFICATION STRUCTURE
BALTIMORE, MARYLAND

INTRODUCTION

Raths, Raths & Johnson, Inc. (RRJ) has been retained by the City of Baltimore (City), Maryland, to perform an engineering evaluation of issues encountered during the construction of the concrete Denitrification Filter (DNF) structure at the Patapsco Waste Water Treatment Plant (PWWTP) located in Baltimore, Maryland. The scope and findings of RRJ's evaluation are summarized in this report. The information included herein is provided with a reasonable degree of engineering certainty. RRJ's findings are based on the review of documentation made available as of the date of this report and its site observations conducted to date. RRJ reserves the right to amend these findings should additional relevant information be made available.

SCOPE

RRJ was asked to evaluate certain project documents, related analyses, and industry standard reference data relevant to concrete construction defects that were identified during construction of the DNF structure. RRJ evaluated allegations made by the project's designer, RK&K and the project's concrete contractor, Fru-Con Construction, LLC (Fru-Con), regarding the nature and causes of the defects to determine the reasonableness of the allegations. RRJ has reviewed numerous industry references and limited project documentation, including design drawings, specifications, test results, inspection reports, and certain project correspondences. Appendix A contains a listing of all documents reviewed in the preparation of this report. RRJ visited the project site to view the facility on May 9, 2016. As of the date of this report, RRJ has not yet been authorized to prepare a computer software analysis of the structure or to perform destructive examinations at PWWTP to independently verify the stated observations and findings of others. RRJ is prepared to proceed with further analysis and testing if authorized to proceed.

SUMMARY OF FINDINGS

Shear Capacity at Base of Y-Walls

The cracking failure of shear keys at the base of the filter Y-walls represent a potentially hazardous structural defect that should be investigated by RK&K and its findings reported to the City. RK&K should develop appropriate conceptual remediation options and submit to the City for review if its investigation reveals structural deficiencies associated with shear key failure at the base of the Y-walls.

Joints and Shear Keys

The shear keys at joints within the DNF structure were designed without Code-prescribed capacity to resist the expected shear demands. This improper design has caused joint cracking and subsequent joint leakage.

Project records indicate the shear keys at some joints were poorly constructed and did not comply with project quality requirements. Some joints were constructed with excessively rough surfaces, some keys exhibited improperly back-sloped or "dove-tailed" profiles, and at least one joint was constructed with an excessively large key projection. Poor shear key construction has contributed to cracking and leaking at the joints.

It is RRJ's opinion that RK&K is responsible for the majority of joint repair costs because of its failure to provide a Code-compliant design to transfer shear forces and control leakage at the keyed joints. Fru-Con should be responsible for a portion of joint repair costs because its poorly constructed joints likely contributed to the severity of the cracking and leaking. A detailed analysis of repair costs and allocations is beyond the scope of this report.

Common Deficiencies

Based on the provisions of the project specifications, Fru-Con was responsible for remediation work necessary to address common construction installation deficiencies that were identified and addressed during the course of the project. This work included patching areas of voids or poor consolidation, epoxy crack injection, and other typical remediation procedures. Installation and maintenance costs for completed repairs utilizing the CIM 1000 coating/sealant system or other repair products at locations other than joints are the responsibility of the contractor.

Ongoing Maintenance of Joint Repair Materials

The installed CIM 1000 repair coating/sealant system has provided limited duration leakage control but will require substantial ongoing maintenance and inspection to insure the structure maintains reasonable watertightness. Responsibility for sealant/coating maintenance costs related to joint deficiencies should be allocated between RK&K and Fru-Con because of their shared responsibility for the cause of the defects. Maintenance, should it become necessary, of materials installed to repair construction defects at locations other than at joints should be the responsibility of Fru-Con.

DESCRIPTION OF FACILITY

The DNF structure is one part of the "Enhanced Nutrient Removal Facilities" upgrade to the PWWTP facility, which is owned and operated by the City. The RK&K-designed DNF structure is a rectangular reinforced concrete structure with a roofless interior divided by a series of closely spaced concrete walls, oriented north-to-south, creating a total of 34 "filter cells," each measuring approximately 12 feet wide by 100 feet long. Seventeen cells are located to the east of an enclosed equipment and control gallery, and 17 cells are located to the west of the gallery. An enclosed filter gallery that extends the entire length of the structure borders the south end walls of the filter cells. Centered at the north end of the structure is an enclosed portion of the building housing the sludge pump and dissolved air flotation thickener rooms (Figure 1).

The DNF structure incorporates three east-west-oriented contraction joints that divide the concrete filter cells into four segments 24 feet to 26 feet long. North-south contraction joints are spaced at 27 feet, and every third joint in this direction is specified as an expansion joint (Figure 2). Joints are also specified at other locations, including at the base of the walls between adjacent filter cells, referred to as "Y-walls" because of the top of the wall configuration (Figure 3).

BACKGROUND

Concrete Joints

Contraction and expansion joints are customarily incorporated into concrete structures to allow limited movement between adjoining concrete sections, relieving internal stress accumulation which can cause

cracking. Contraction joints are designed to allow adjoining sections to separate or shrink, and are typically constructed with little or no space between the adjacent concrete sections. Expansion joints incorporate compressible filler materials between the adjacent concrete sections, allowing the concrete to shrink or expand relative to adjacent segments. The joint spacing at the DNF structure creates a grid of separate concrete segments roughly 25 feet by 27 feet, considered a reasonable spacing for purposes of minimizing shrinkage cracking. Shear keys, discussed below, were incorporated into the joint design to ensure that the separate concrete segments function together structurally as intended.

Shear Keys, General

Shear keys are interlocking projections incorporated into joints between adjacent sections of cast-in-place concrete. They are intended to allow the structure to expand or contract along or across the joint while restraining movement in one direction across the shear key projection. The shear keys enable waterstops and sealant installed at the joints to function properly and prevent leakage while the structure maintains proper alignment. A cracked or otherwise failed shear key will not have the intended shear capacity. A failed shear key may allow excessive structural deflection and potential damage to joined elements of the structure. A failed shear key may also compromise the waterstop function, enabling uncontrolled leakage at the joints (Figures 4 and 5).

Shear keys are proportioned to provide adequate rigidity and strength to allow the transfer of shear forces across a joint. For the DNF structure, the specified key width was typically T/3 and the key projection length was T/6, where "T" is the thickness of the wall or slab. Per the response issued in February 2011 to RFI 366, the T/6 key projection was revised to a standard 4½ inches for all key locations.

Shear keys at the DNF structure incorporated waterstops, a flexible polyvinyl chloride (PVC) strip material cast into the concrete at joints so that they span the joint, to provide a continuous seal against leakage at the joint. The specified waterstops were 9 inches long and were embedded approximately 4½ inches into the concrete on each side of a joint.

Project History

The contract for construction was awarded to Fru-Con with a notice to proceed on December 29, 2009. Concrete placement began in January 2011. Special Inspection Reports (SIR) were compiled throughout the duration of the concrete construction. The SIRs, based on field quality control inspections of the construction activities, were generated by the City's inspectors and document nonconforming work. SIRs, specifically related to concrete deficiencies, involve inadequate curing before removing forms, improper

curing techniques, installation of reinforcement without shop drawings, improper rebar installation techniques, improper keyway construction, incorrect keyway depth, and voids in the concrete. RRJ has reviewed 36 separate SIRs related to the concrete construction at the DNF that were documented by City inspectors Chuck Biondo, Frank Ziegler, Yomi Salami, and Dave Tornkqvist. All SIRs reviewed by RRJ are listed in Appendix A.

Deficiencies involving shear key and joint construction, manifested as leaking joints and cracking at joints, emerged as the primary focus of concern as evidenced by the SIRs. Of the 36 SIRs reviewed by RRJ, a total of 10 (SIRs 42, 44, 47, 49, 54, 62, 63, 64, 106, and 124) are directly related to the joint/shear key construction and joint leakage.

Fru-Con along with its consultants Wiss, Janney, Elstner and Associates, Inc. (WJE), Gibraltar Construction Services (GCS), and Hanskat Consulting Group, LLC (Hanskat) allege that water leakage/cracking deficiencies at joints in the DNF structure are explained by design deficiencies involving inadequate shear key capacity and improper shear key geometry. Fru-Con contends that adequate construction practices were followed during the concreting based on the quantity of defects requiring repair that were discovered after the original concrete placement and compared to typical defect quantities encountered on similar projects. Fru-Con's allegations and contentions are set forth in WJE reports dated October 16, 2012 and August 28, 2014; WJE letters dated March 18, 2013 and June 24, 2013; GCS report dated August 29, 2014; and Hanskat letter report dated September 8, 2014.

RK&K, through its own documentation and that of its consultant, A+F Engineers, Inc. (A+F), has alleged that all concrete deficiencies, including the shear key/joint issues, were caused by Fru-Con's poor construction practices. The RK&K/A+F allegations are set forth in their September 12, 2014 joint presentation, as well as RK&K's August 9, 2013 Hearing Presentation and A+F's November 21, 2014 Supplemental Information Submission.

EVALUATION OF DEFICIENCIES

The damage and subsequent leakage treatment of the DNF concrete structure occurred prior to RRJ's involvement. Currently, the remedial sealant system that was applied to the concrete surface conceals virtually all the joints in the DNF structure. RRJ's evaluation therefore relied upon documentation compiled by others and review of numerous relevant project documents, including the SIRs discussed above, construction RFIs, design drawings and specifications, photographs, miscellaneous correspondences, industry standards, and other miscellaneous reference material.

Due to the predominance of shear key, joint cracking, and leakage issues within the available project documentation, RRJ's evaluation focused largely on those joint deficiencies.

JOINT DESIGN DEFICIENCIES

Shear Key Structural Capacity

Although cracking and leakage at joints was addressed by RK&K and Fru-Con in detail, neither have offered technical commentary or opinions regarding potential capacity deficiencies associated with the shear key defects. Of particular concern to RRJ is the condition at the base of the Y-walls where the shear key is relied upon to prevent out-of-plane lateral wall movement under unbalanced loading conditions. Unbalanced loading conditions could occur when one filter cell is filled with water while an adjacent filter is relatively empty. A crack forming across the base of the shear key will reduce direct shear transfer across the joint, potentially causing unanticipated and hazardous out-of-plane deflections, increased cracking and leakage, and permanent reductions to wall stiffness and shear capacity. The severity of shear capacity reduction is partially a function of the actual crack separation. If the crack is held relatively tightly together, "aggregate interlock" across the crack will likely decrease the deleterious effect. Since the as-built configuration of the Y-walls completely conceals the cracked condition of the shear keys, this potential structural deficiency should be addressed through rational analysis combined with further destructive evaluation and/or installation of supplemental shear reinforcement at the base of the walls.

Waterstop

The keyed joints were designed incorporating 4 1/2-inch key projections and a 9-inch-wide "dumbbell" style PVC waterstop cast directly into the center of concrete key projections to prevent leakage at the joint. Since one-half of the 9-inch waterstop is embedded into the concrete on both sides of the joint, the waterstop terminates at 4 1/2 inches deep within the male key, coinciding with the base of the male key. This design makes the joint susceptible to leakage because a crack that forms across the base of the male key can bypass the end of the waterstop, providing a direct leakage path through the joint.

As-designed and installed, the waterstop is centered in the male key, effectively dividing the key into two segments, each with half the effective width of the whole. The total combined shear capacity of two-half-width shear keys is less than that of a single full-width key. In some instances, such as within the Y-walls, the effective width of the shear key on one side of the waterstop (3 1/2 inches) is less than the length of the projection (4 1/2 inches), indicating a condition where shear keys will be particularly vulnerable to cracking.

Shear Reinforcement

Unreinforced concrete has limited resistance to shear cracking failure, which occurs abruptly and without warning. To address this, customary reinforced concrete design incorporates reinforcing steel located to intersect the plane of expected shear cracking. Embedded steel reinforcement resists the shear force, controlling concrete crack size and propagation. The design for the DNF shear keys incorporated no steel reinforcement crossing the plane of expected shear cracking, which is located at the base of the male keys. The lack of reinforcement crossing the shear plane at the base of the male shear keys has likely exacerbated the size and propagation of cracks originating at those locations and offers no additional shear capacity once the concrete key fails (Figure 6).

Shear Key Geometry Around the Sump Trough

A sump trough present at each filter cell in the DNF interrupts a horizontal keyway installed in the base slab at east-west contraction joints. The design incorporated a U-shaped keyway segment around each sump pit to maintain the continuity of the waterstop embedded in the keyway (Figure 7). The vertical legs of the keyway in the U-shaped segment resist differential movement between adjacent slab sections in the direction parallel to the east-west joint, increasing stress concentrations and the likelihood of shear failure at the base of the male keys at these locations and effectively freezes the joint. During leakage testing, some of these locations reportedly exhibited high rates of leakage prior to repairs.

Consultants for Fru-Con and RK&K offered opposing opinions regarding the amount of differential movement, level of stress, and likelihood that shear key cracking failure would occur at these locations. WJE opined that the shrinkage and thermal effects at this location would cause an overstress condition capable of cracking and failing the vertical portion of the shear keys. A+F opined that the amount of differential movement and stress concentration estimated by WJE was excessive and stresses that were present would not be concentrated at the most vulnerable part of the shear key.

Analyses undertaken by WJE and A+F were based on rational engineering approaches and did not attempt to take into account normal concrete construction tolerances and imperfections that could worsen their results. For example, a small length of the vertical portion of the sump trough key surface with a minor flatness deviation, or "bump," could become overstressed and crack if it contacts the mating key surface before nearby portions of the key come into contact. In this example, only a small amount of differential movement could initiate the cracking failure of the key. As-designed, the configuration of shear keys at the sump troughs contained vulnerabilities that were at least partially responsible for joint failures at these

locations. The extent that poor concrete construction contributed to the sump trough shear key failures cannot be accurately estimated because the conditions are concealed.

Design Capacity

In its report dated August 28, 2014, WJE concluded the unreinforced male keys, specifically for the base slab and Y-walls, appeared to not be properly designed to resist the service loads. Computer modeling performed by WJE determined the demand on the shear keys was greater than 700 psi. The available shear capacity calculated by WJE was 89 psi, using building code provisions set forth in American Concrete Institute (ACI) 318-08, Section 22.5.4. WJE's analysis indicated that the as-designed shear keys would be overstressed by a factor of nearly eight and therefore would likely crack under service conditions.

In its report dated November 21, 2014, A+F reported calculating a shear capacity for the DNF wall shear keys of 805 psi, nearly ten times larger than that calculated by WJE using ACI code provisions. A+F's calculations relied on a specification within the American Association of State Highway and Transportation Officials (AASHTO), *Guide Specification for Design and Construction of Segmental Bridges,* which addresses shear keys between segmental concrete bridge sections.

The geometric properties and loading characteristics of segmental bridge sections are generally not comparable to those incorporated at the keyed walls of the DNF structure. The use of the AASHTO shear capacity calculation method is not customary or proper for use in the design of wastewater treatment plant shear keys. The use of the ACI shear calculation method is the predominant standard for wastewater treatment plant design.

Calculations should have been performed to ensure the capacity of the as-designed male key projections was adequate to control cracking. To date, RRJ has not been provided RK&K calculations demonstrating the design of the shear keys at the DNF structure was sufficient to prevent cracking.

JOINT CONSTRUCTION DEFICIENCIES

Keyway Forming Issues

The contract specifications obligated Fru-Con to provide at least a slight taper to the keyed joints. Male key projections with a back-sloped profile do not comply with the original design intent as outlined in Specification Section 03 00 30 3.1.O:

> Forms shall be filleted at all sharp corners, except when otherwise specified in the Contract Documents and shall be given a bevel or draft in the case of all projections.

A "draft" refers to providing a slight taper to the projections to allow for easy removal of the formwork. See Figure 8 for graphic representations of the shear key conditions discussed in this section.

After cracking and leaking started to become problematic, Fru-Con involved WJE to investigate the cause of the leakage. WJE performed investigative openings at the sump walls of Filters #4 and #6, which revealed a "dovetailed" keyway condition in which the sides of the keyway were slightly back-sloped. RRJ's review found no other documentation indicating that the "dovetail" condition was present at other locations. Subsequent reports assume the majority of keyways improperly incorporated the "dovetail" configuration, which would have likely contributed to the cracking and leaking observed. Keyed joints that were back-sloped by Fru-Con did not conform to Specification Section 03 00 30 3.1.O.

Fru-Con issued RFI 037 on February 3, 2010, prior to the start of concrete placement, proposing the use of a tapered keyed joint. The proposal was accepted by RK&K on February 11, 2010. It is unclear why RFI 037 was accepted by RK&K since its specification (Section 03 00 30 3.1.O) already required the use of drafts at keyways.

In a letter report dated April 3, 2013, Fru-Con states that they did not provide a tapered key and were under no contractual obligation to do so. This statement was reiterated by Mike Fisher of Fru-Con during the Division Chief's Level Hearing on August 9, 2013. However, in later reports, Fru-Con stated that the majority of keyways were tapered in accordance with RFI 037. Fru-Con's later claim was corroborated by Mr. Biondo who reported that the tapered keyway configuration was typical of all joints in the facility. RRJ observed two tapered vertical keyways on the south wall between the walkway and the filters during its site visit.

Although the documentation available to RRJ indicates that tapered keyways were provided at the majority of the joints, it is not clear how many of these joints were properly formed. SIR 42 provides photographs from the City inspector showing the female side of a horizontal keyed joint that appears to have been gouged out of the plastic concrete after placement. SIR 44 describes completed walls 89 through 93 with nonconforming keyways having a similar rough profile. Fru-Con responded to SIR 42 by issuing RFI 037A, which proposed leaving the tapered section of the gouged joint with a rough finish but grinding the edges at the top of the key to provide smoother surfaces. Fru-Con's proposed repair approach was accepted by RK&K on October 13, 2011. In its response to SIR 42, Fru-Con indicated that a wood key-forming insert would be provided to properly form all subsequent wall keyways. However, Robert Nash (Senior Project

Manager for the City) reported that the majority of keyways were constructed without incorporating proper key-forming inserts in the formwork. Figure 9 depicts a key-forming insert incorporated into concrete formwork.

Normal concrete shrinkage and thermal expansion/contraction causes movement of mating parts at joints. If a joint is not properly formed, or has been subject to gouging, the relative displacement of the mating parts may cause interlocking, excessive stress, and cracking between the male and female keys. Attempts to remediate improperly formed or gouged keys using mechanical methods can cause impact damage to the near-surface concrete, increasing leakage potential by opening additional pathways within the concrete for liquids to bypass the embedded waterstop.

The project documents reveal evidence of both improper joint construction, resulting in rough-formed key surfaces and proper construction practices using forms and inserts to provide smooth, tapered joints. No information identifying and quantifying joints that were improperly formed has been discovered.

Shear Key Projection

SIR 106 indicates a Y-wall vertical keyway was observed to have a male key projection of $7^1/_4$ inches, significantly larger than the uniform key projection of $4^1/_2$ inches accepted through RFI 366. RK&K accepted the joint stating that more problems would be created if a repair was attempted. The large projection of this shear key causes increased forces at its base and an increased likelihood of cracking. RK&K required Fru-Con to seal this joint with CIM 1000.

COMMON DEFICIENCIES

Numerous commonly occurring concrete construction deficiencies involving concrete placement, consolidation, curing, and formwork accuracy were identified during the construction of the DNF structure. Common concrete construction deficiencies on large projects are generally accepted if repaired to be in compliance with the project specifications. Section 03 30 00 3.30.A.2 of the DNF construction specifications states, "Completed concrete work, which fails to meet one or more requirements, but which has been repaired to bring it into compliance will be accepted without qualification." Project documents reviewed by RRJ indicate that where common construction defects were identified, repairs were performed to achieve compliance with the project specifications.

LEAKAGE REMEDIATION

Widespread leakage issues occurring throughout the DNF structure are evidenced by the project documentation and by observations of the repaired structure. Mr. Biondo reported to RRJ that cracking and leaking could be found essentially everywhere in the facility. During RRJ's site visit, repairs utilizing polyurethane-based CIM 1000 coating/lining system were observed along every joint in the DNF structure. In some locations, large portions of the filter walls were also coated with the CIM material. Large-scale application of coating to wall surfaces likely indicates that the concrete substrate was not adequately watertight and, therefore, prone to leakage due to cracked, voided, poorly-consolidated, or otherwise defective concrete.

FINDINGS

Shear Capacity at Base of Y-Walls

The cracking failure of shear keys at the base of the filter Y-walls represents a potentially hazardous structural defect that should be promptly investigated by RK&K and its findings should be reported to the City expediently. Should its investigation reveal structural deficiencies associated with shear key failure at the base of the Y-walls, RK&K should develop appropriate conceptual remediation options and submit to the City for review.

Joint and Shear Keys

The shear keys at joints within the DNF structure were designed without Code-prescribed capacity to resist the expected shear demands. This improper design has caused joint cracking and subsequent joint leakage.

Project records indicate the shear keys at some joints were poorly constructed and did not comply with project quality requirements. Some joints were constructed with excessively rough surfaces, some keys exhibited improperly back-sloped or "dove-tailed" profiles, and at least one joint was constructed with an excessively large key projection. Poor shear key construction has contributed to cracking and leaking at the joints.

Common Deficiencies

Based on the provisions of the project specifications, Fru-Con was responsible for remediation work necessary to address common construction installation deficiencies that were identified and addressed during the course of the project. This work included patching areas of voids or poor consolidation, epoxy crack injection, removal, and other typical remediation procedures. Installation and maintenance costs for completed repairs utilizing the CIM 1000 coating/sealant system or other repair products at locations other than the joints are the responsibility of the contractor.

RECOMMENDATIONS FOR REMEDIATION

Ongoing Maintenance of Joint Repair Materials

The installed CIM 1000 repair coating/sealant system has temporarily provided leakage control but will require substantial ongoing maintenance and inspection to insure the structure maintains reasonable watertightness.

Supplemental Shear Reinforcement for the Base of the Y-Walls

If the review by RK&K determines the structural deficiency at the base of the Y-walls requires remediation, RRJ anticipates that externally anchored wall base supports would provide a solution that does not require demolition of existing concrete construction. Figure 10 depicts a conceptual repair to provide supplemental shear capacity at the base of the Y-walls.

Respectfully submitted,

RATHS, RATHS & JOHNSON, INC.

W. Joseph Macicak, S.E., P.E. (IL)
Consulting Engineer

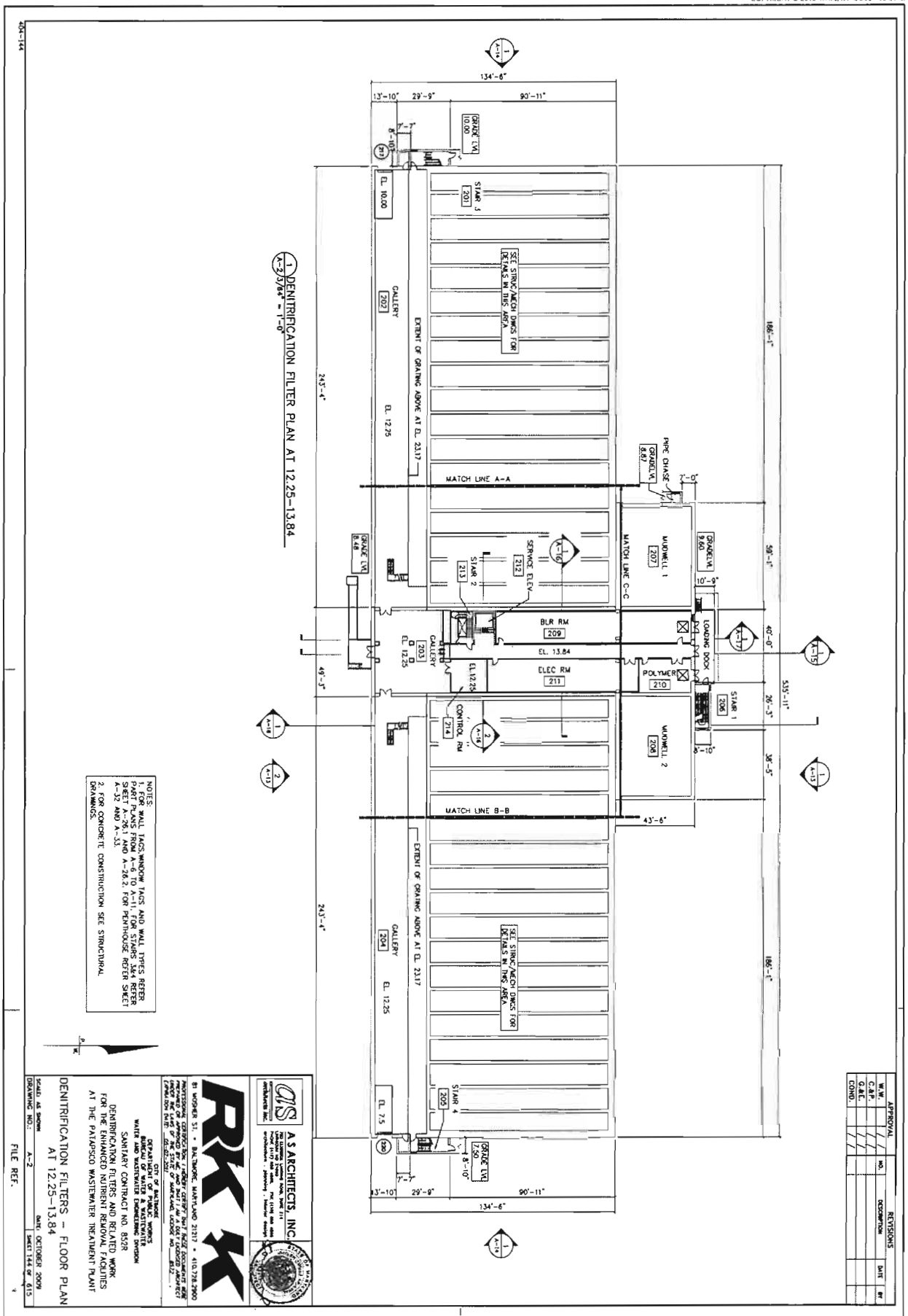
Otto C. Guedelhoefer III, S.E., SECB, F.ASCE
Principal

August 19, 2016

G:\14099\Docs\Report\text.docx

FIGURES 1 THROUGH 10

G:\14099\Drawings\FIGURES\08-16-16\FIG 01 - FILTER PLAN.dwg , Plotted August 19, 2016 : By: Brian Glover : Last Saved: Baglover (August 19, 2016)



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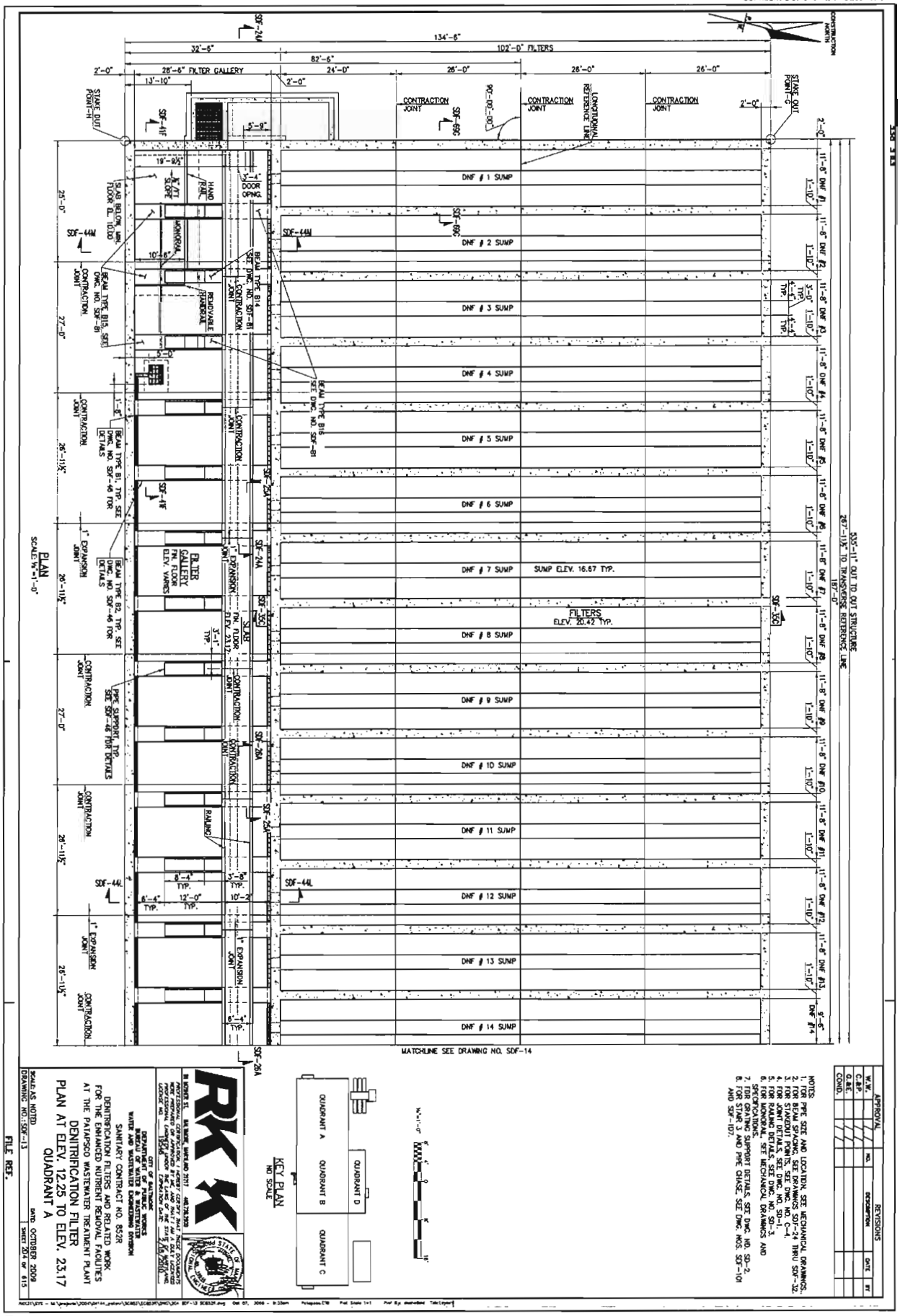
DENITRIFICATION FILTER PLAN
PATAPSCO WASTE WATER
TREATMENT PLANT
BALTIMORE MARYLAND

DATE:	08-19-16
SCALE:	N.T.S.
JOB #:	14099
DRAWN BY:	BAG
PRINCIPAL:	OCG
CHECKED BY:	WJM

FIGURE
1



NOTES:
1. FOR PIPE SIZE AND LOCATION, SEE MECHANICAL DRAWINGS.
2. FOR BEAM SPACING, SEE DRAWINGS SDF-24 THRU SDF-32.
3. FOR SLAB OPENINGS, SEE DWG. NO. C-4.
4. FOR STAIR DETAILS, SEE DWG. NO. SD-3.
5. FOR RAILING DETAILS, SEE MECHANICAL DRAWINGS AND SPECIFICATIONS.
6. FOR MONORAIL, SEE MECHANICAL DRAWINGS AND SPECIFICATIONS.
7. FOR PIPING SUPPORT DETAILS, SEE DWG. NO. SD-2.
8. FOR STAIRWAYS AND PIPE CHASE, SEE DWG. NOS. SD-101 AND SDF-107.

APPROVAL				REVISIONS			
W.W.				NO.	DESCRIPTION	DATE	BY
C.B.P.							
O.C.E.							
CONST.							

DEPARTMENT OF PUBLIC WORKS
BUREAU OF WATER & WASTEWATER
WATER AND WASTEWATER ENGINEERING DIVISION

SANITARY CONTRACT NO. 852R

DENITRIFICATION FILTERS AND RELATED WORK
FOR THE ENHANCED NUTRIENT REMOVAL FACILITIES
AT THE PATAPSCO WASTEWATER TREATMENT PLANT

PLAN AT ELEV. 12.25 TO ELEV. 23.17 DENITRIFICATION FILTER QUADRANT A

SCALE: AS NOTED
DRAWING NO.: SDF-13
DATE: OCTOBER 2009
SHEET 204 OF 815

FILE REF.

R K K
31 HOWER ST., BALTIMORE, MARYLAND 21237 410.574.7500
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19546, EXPIRATION DATE: 4/09/2010
STATE OF MARYLAND

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DENITRIFICATION FILTER PLAN
PATAPSCO WASTE WATER
TREATMENT PLANT

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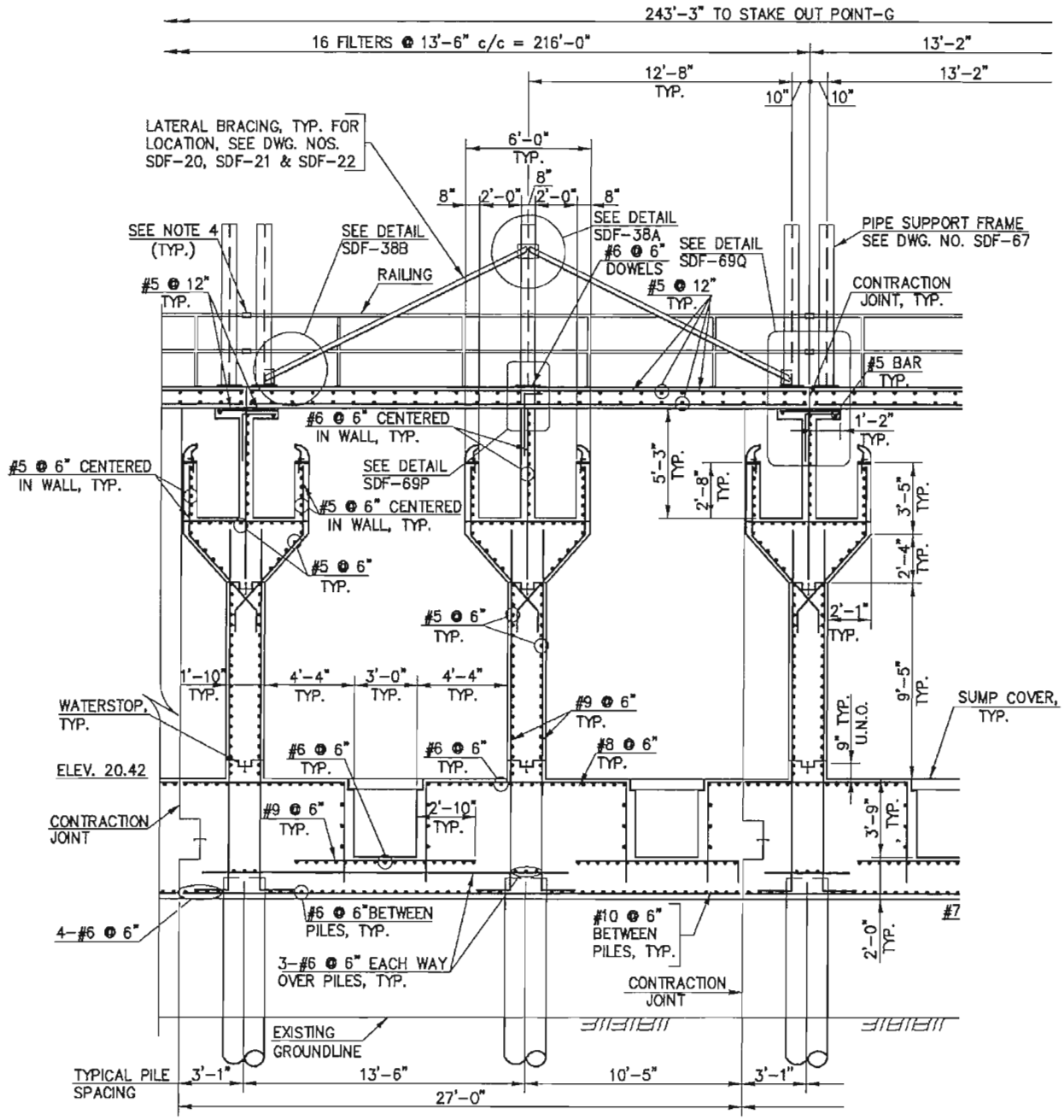
FIGURE
2



THE UNDERLYING DRAWING IS FOR REFERENCE ONLY:		
FROM DRAWINGS BY: RK&K		
SHEET: SDF-36	DATED: OCTOBER 2009	ISSUED FOR:-

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DENITRIFICATION FILTER SECTION
PATAPSCO WASTE WATER TREATMENT PLANT
BALITMORE MARYLAND

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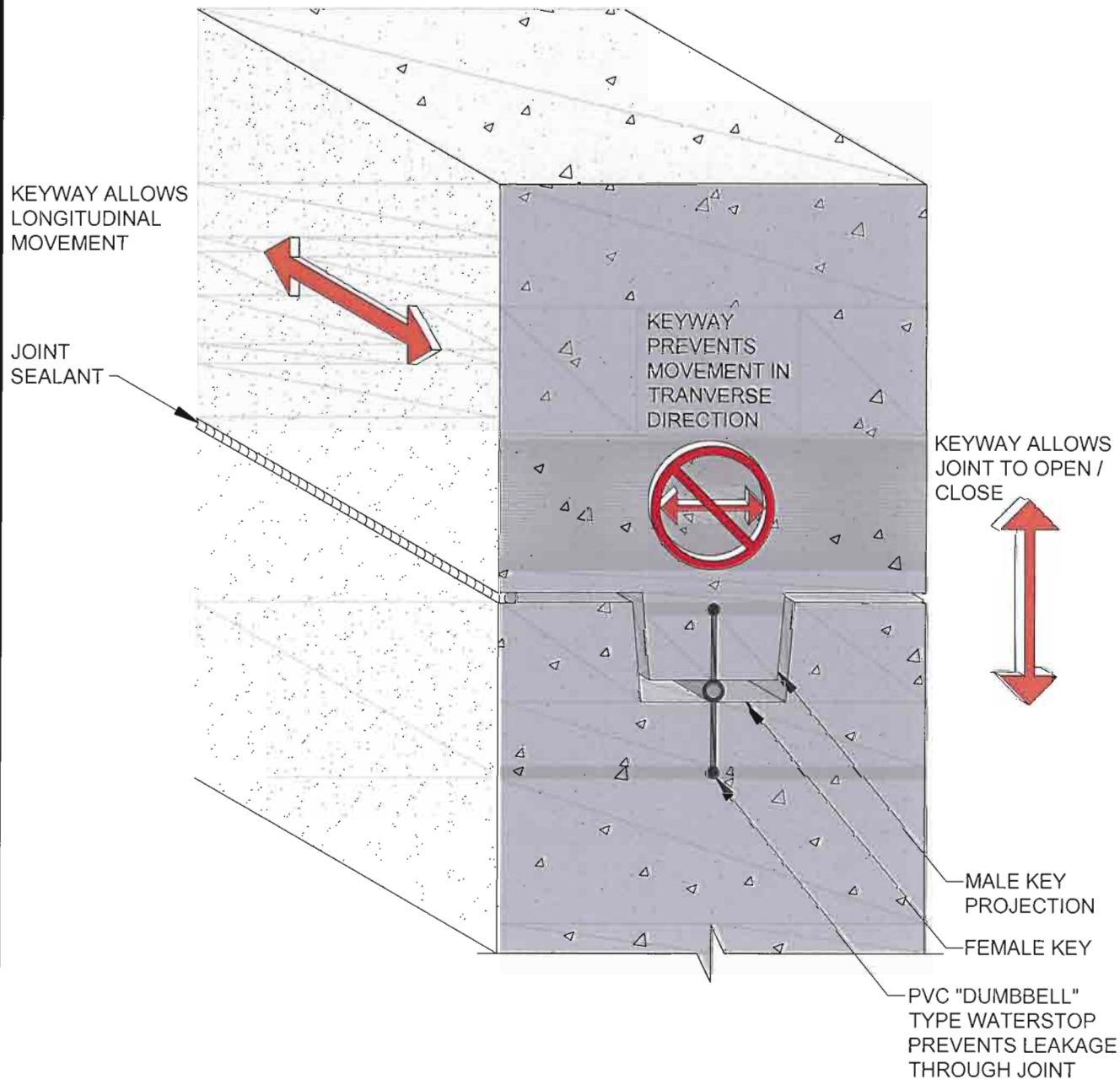
3
FIGURE



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KEYED JOINT IN CONCRETE
PATAPSCO WASTE WATER TREATMENT PLANT
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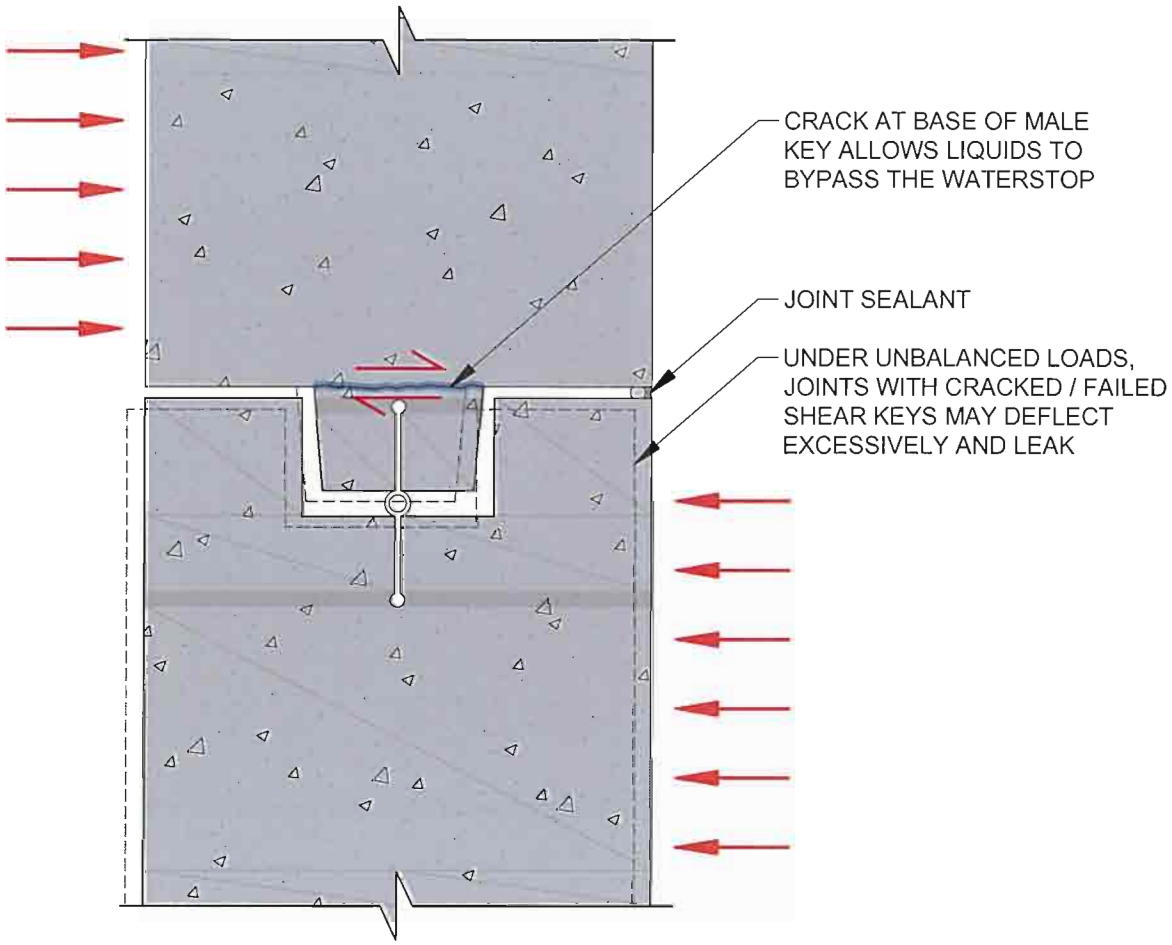
4
FIGURE



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FAILED SHEAR KEY
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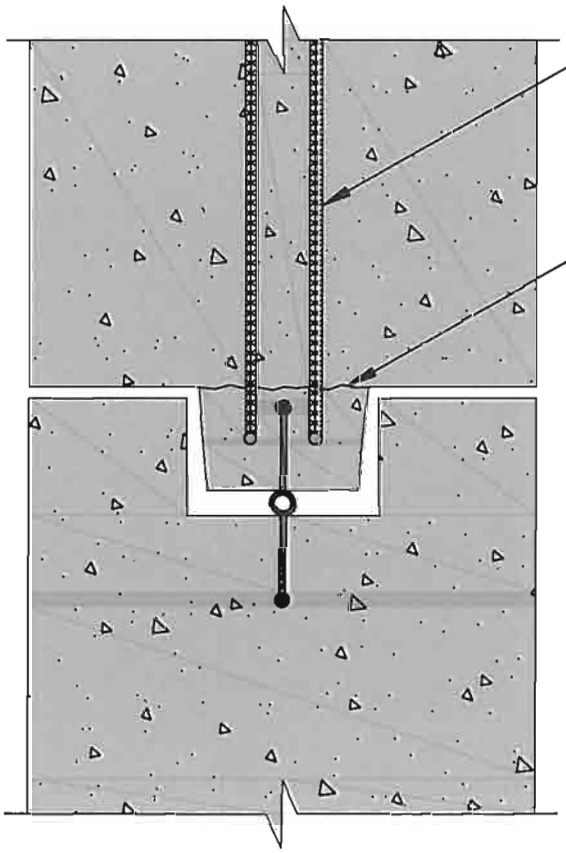
5
FIGURE



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REINFORCED KEY
PATAPSCO WASTE WATER TREATMENT PLANT
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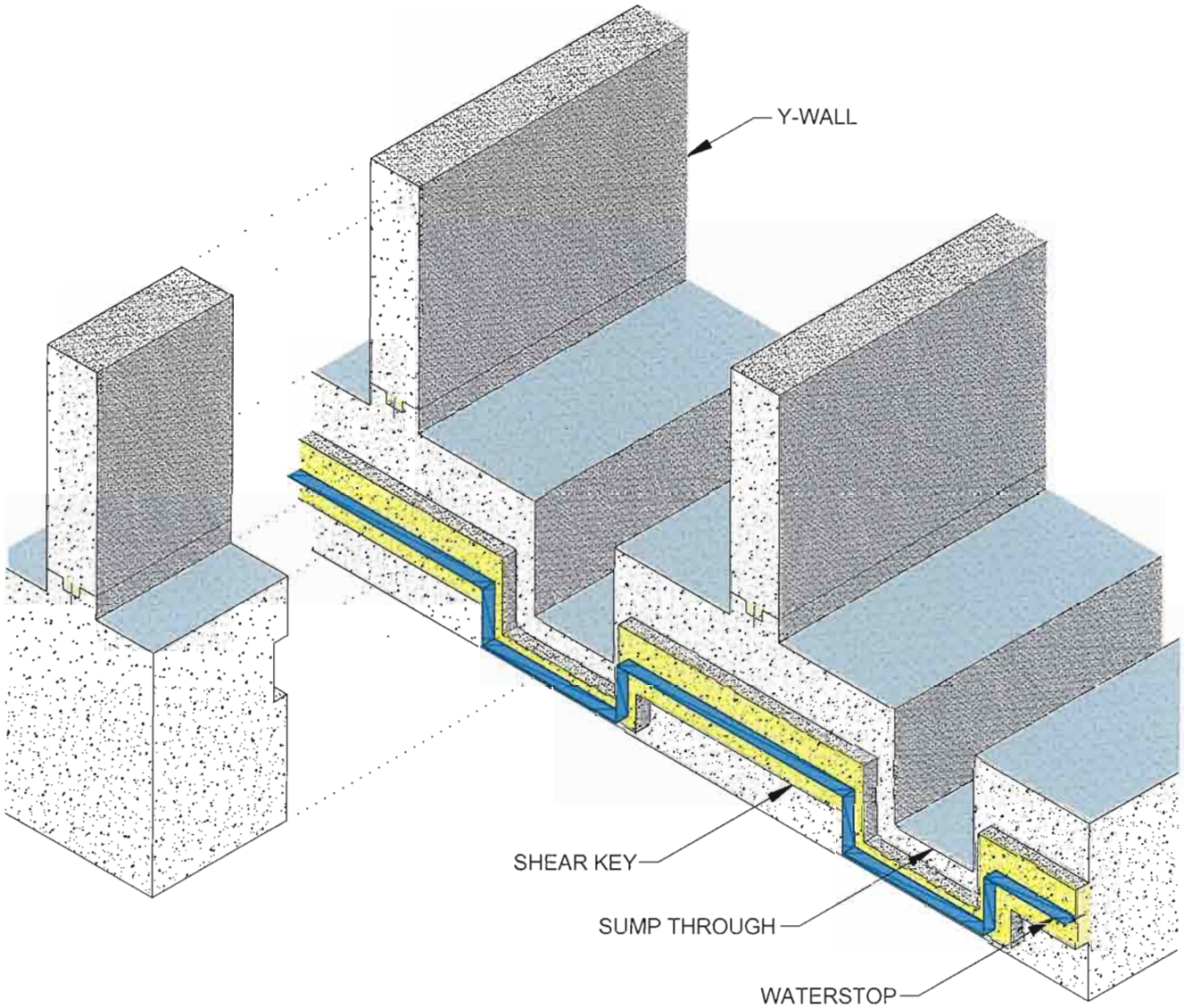
6
FIGURE



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SHEAR KEY CONFIGURATION AT SUMP THROUGHS

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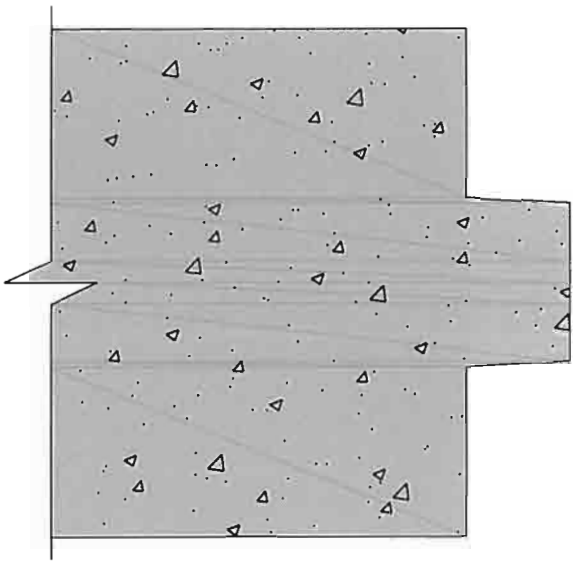
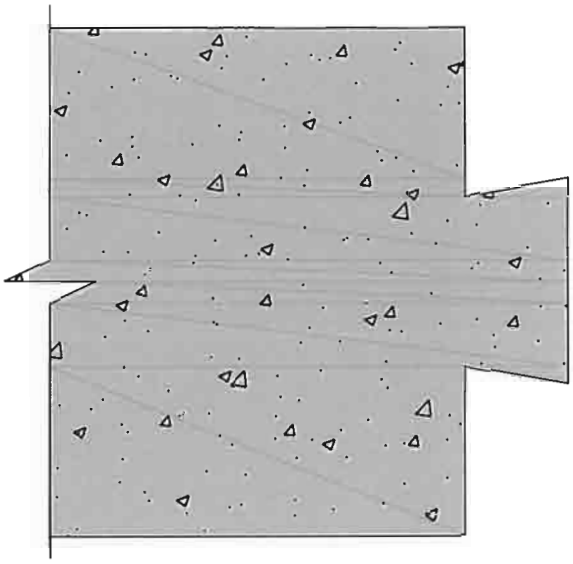
7

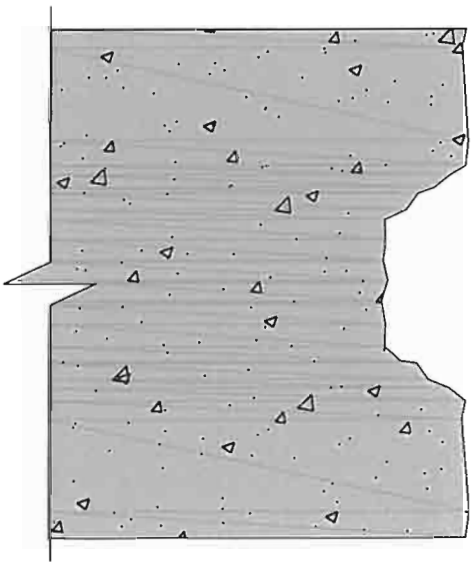
FIGURE



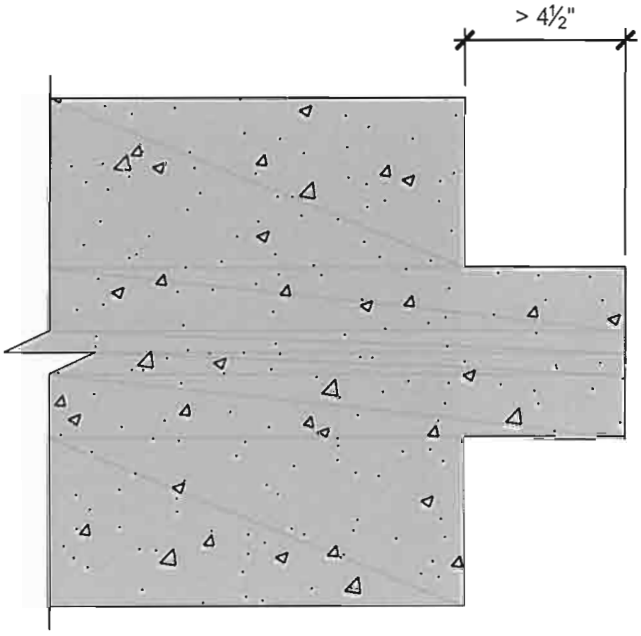
A. MALE SHEAR KEY WITH PROPERLY FORMED "DRAFT" INCORPORATED TO AID IN FORM REMOVAL



B. MALE SHEAR KEY WITH IMPROPER BACK-SLOPED OR "DOVE-TAILED" PROFILE



C. ROUGH-FORMED OR "GOUGED" FEMALE KEY



D. EXCESSIVE KEY PROJECTION

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AS-BUILT SHEAR KEYS
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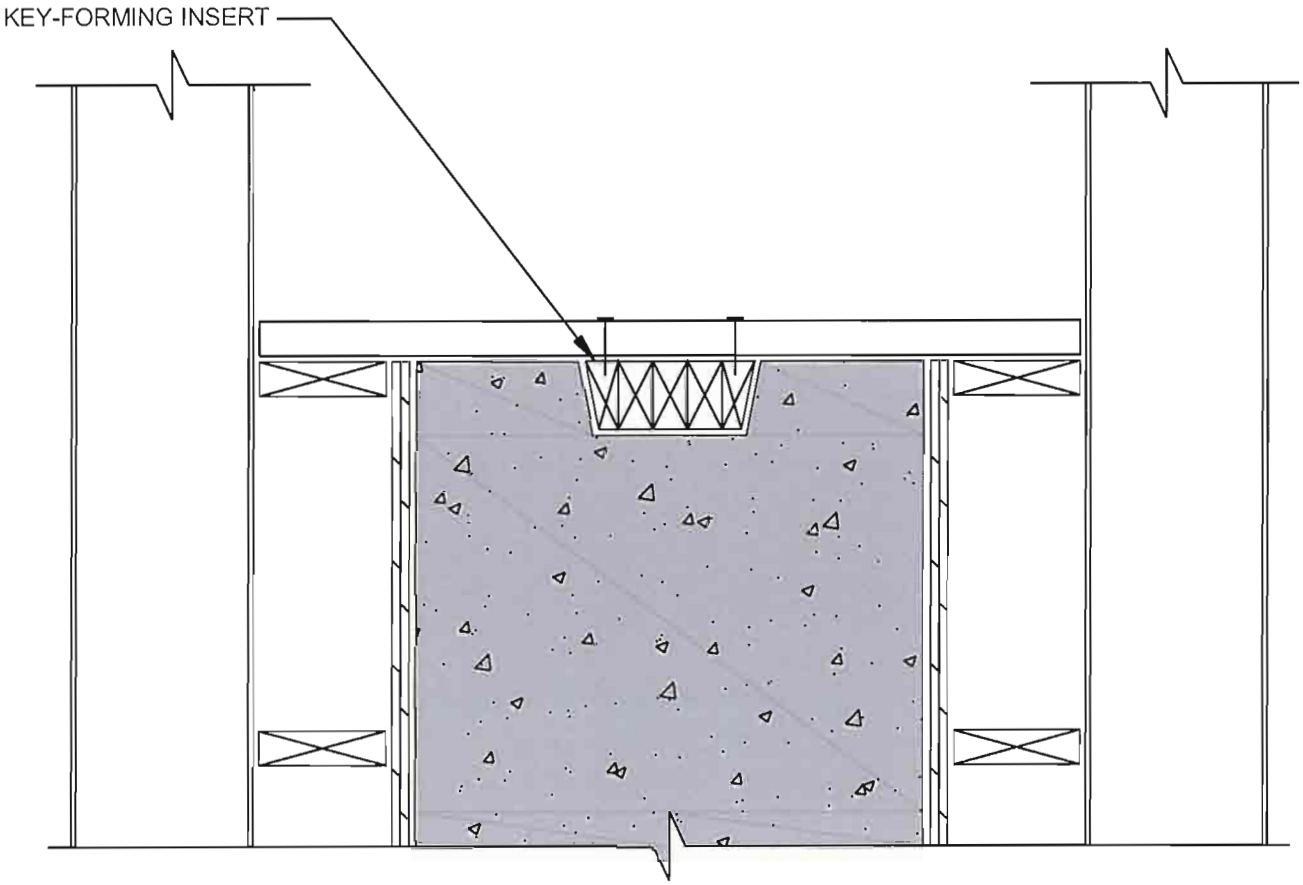
8
FIGURE



CONCEPTUAL VIEW OF CONCRETE FORMWORK INCORPORATING
"KEY-FORMING INSERT" TO FORM A TAPERED FEMALE KEY

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CONCEPTUAL KEY FORMWORK
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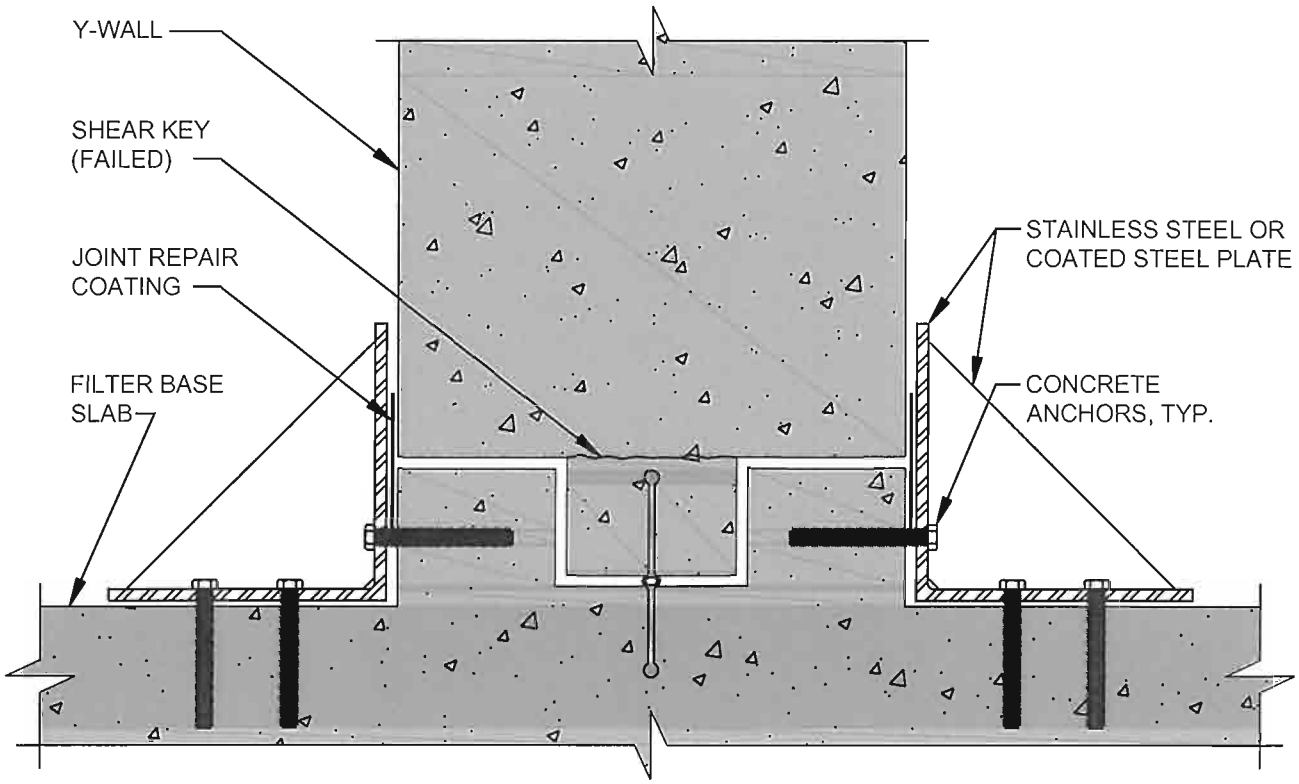
9
FIGURE



CONCEPTUAL REPAIR
SUPPLEMENTAL SHEAR
REINFORCEMENT AT BASE OF Y-WALL

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CONCEPTUAL REPAIR
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10
FIGURE

APPENDIX A

Documents Reviewed

DOCUMENTS REVIEWED

- RKK Contract Drawings Volumes 1 through 4 dated October 2009
- RKK Addendum No. 1 dated October 23, 2009
- RKK PowerPoint presentation dated September 12, 2014
- A+F formal report dated November 21, 2014 and all attachments
- RKK Structural Calculations Volume No. 1 dated November 2010
- City filter leak repair letter dated February 20, 2013 and all attachments
- City concrete claims outline document dated September 12, 2014 and all attachments
    - Attachment A: Concrete pre-construction meeting agenda dated September 23, 2010
    - Attachment B: Various special inspection reports (SIRs)
    - Attachment C: Various formal letters and correspondence from the City, RKK, and Fru-Con
    - Attachment D: Photographs
- Inspection photographs received during site visit on May 9, 2016
- Fru-Con filter joint repairs letter dated October 17, 2012 and all attachments
- Fru-Con filter joint waterstop submittals dated June 8, 2012, June 27, 2012, and July 9, 2012 and RKK response
- Fru-Con filter joint repairs cost proposal letter dated February 4, 2013 and all attachments
- Fru-Con appeal of claim denial letter dated March 18, 2013
- Fru-Con additional support documentation letter dated Apr. 3, 2013 and attachment
- Fru-Con formal report dated September 10, 2014 and all attachments
    - Ex. A: Concrete specific special inspection reports (SIRs)
    - Ex. B: Leak specific SIRs
    - Ex. C: Photographs
    - Ex. D: City response to request for information (RFI) no. 37A dated October 13, 2011
    - Ex. E: RKK response to RFI no. 37A dated October 13, 2011
    - Ex. F: Gibraltar Construction Services expert report dated August 29, 2014
    - Ex. G: RFI 366 dated January 31, 2011
    - Ex. H: WJE letter report dated August 28, 2014
    - Ex. I: Hanskat Consulting Group letter report dated September 8, 2014
- Fru-Con appeal letter to Bureau Head dated October 28, 2014.
- WJE letter report dated October 16, 2012
- WJE letter report dated August 28, 2014
- WJE letter report dated October 27, 2014
- American Concrete Institute, "Standard Specifications for Tolerances for Concrete Construction and Materials" (ACI 117-90) and Commentary (ACI 117R-90)
- American Concrete Institute, "Joints in Concrete Construction" (ACI 224.3R-95)
- American Concrete Institute, "Building Code Requirements for Structural Concrete Structures" (ACI 318-05) and Commentary (ACI 318R-05)
- American Concrete Institute, "Code Requirements for Environmental Engineering Concrete Structures" (ACI 350-01) and Commentary (ACI 350R-01)
- American Concrete Institute, "Tightness Testing of Environmental Engineering Concrete Structures" (ACI 350.1-01) and Commentary (350.1R-01)
- American Concrete Institute, "Design Considerations for Environmental Engineering Concrete Structures" (ACI 350.4R-04)

- RFI 366 correspondence
    - RFI 366 issued by Fru-Con on January 31, 2011
    - RKK response to RFI 366 dated February 23, 2011
    - City response to RFI 366 dated February 23, 2011

- Filter movement and defects photographs provided by the City from 2012 and 2013 on July 16, 2015
- Various correspondence between Fru-Con and City regarding CIM 1000 repairs
- Pre-bid contractor questions and answers
- Contract specifications
- AASHTO Guide Specifications for Design and Construction of Segmental Concrete Bridges, 1999/2003 Interim
- SIRs reviewed by RRJ

SIR 33	Unauthorized Work Performed	June 30, 2011
SIR 38	Rust Stains on Concrete	August 8, 2011
SIR 40	Improper Form Removal	September 22, 2011
SIR 41	Unauthorized Work Performed	October 5, 2011
SIR 42	Non-Conforming Work Performed	October 11, 2011
SIR 44	Non-Conforming Work Performed	November 14, 2011
SIR 45	Improper Curing of Cylinders	November 21, 2011
SIR 47	Water Leakage at Filters	November 29, 2011
SIR 49	Contraction Joint Excessive Movement	December 2, 2011
SIR 54	Water Leakage at Filters	December 14, 2011
SIR 60	Concrete Defects	February 7, 2012
SIR 62	Influent Trough Cracks	March 1, 2012
SIR 63	Contraction Joint Concerns	March 2, 2012
SIR 64	Water Leakage at Filters	March 16, 2012
SIR 66	Improper Curing Techniques	April 9, 2012
SIR 74	Improper Curing Techniques	July 15, 2012
SIR 75	Improper Curing Techniques	July 25, 2012
SIR 76	Non-Conforming Repair Work Performed	August 1, 2012
SIR 77	Non-Conforming Work Performed	August 7. 2012
SIR 80	Non-Conforming Work Performed	September 20, 2012
SIR 90	Anchor Bolts Placed through CIM Repair	November 7, 2012
SIR 102 (Revised)	Inadequate Concrete Cover	March 15, 2013
SIR 106	Non-Conforming Work Performed	April 3, 2013
SIR 114	Water Leakage through Electrical Conduit	May 9, 2013
SIR 116	Non-Conforming Work Performed	May 21, 2013
SIR 124	Water Leakage at Filters	August 2, 2013
SIR 146	Improper Grouting Procedure	December 13, 2013
SIR 148	Cracking of Roof Sloped Toping	January 2, 2014
SIR 164	Lack of Productivity in Applying CIM Repairs	March 21, 2014
SIR 168	Leakage in the Mudwells	April 17, 2014
SIR 173	Unauthorized Repair Performed	June 20, 2014
SIR 174	Inadequate Repair	June 24, 2014
SIR 175	Inadequate Repair	June 24, 2014
SIR 177	Inadequate Repair	July 1, 2014
SIR 179	Inadequate Repair	July 9, 2014
SIR 183	Inadequate Repair	July 22, 2014

APPENDIX B

Resume of Otto C. Guedelhoefer

OTTO C. GUEDELHOEFER, S.E., F.ASCE

Principal

+CONTACT

Raths, Raths & Johnson, Inc.
500 Joliet Road, Suite 200
Willowbrook, IL 60527
Phone: 630.325.6160
Email: ocg@ix.netcom.com

Chuck Guedelhoefer is a Licensed Structural Engineer and Principal at Raths, Raths & Johnson, Inc. An accomplished structural engineer with over 46 years of experience, he has specialized in structural engineering and forensics, field and laboratory testing, design and construction peer view, quality assurance programs, and litigation consulting.

During his 37-year career as a key leader of RRJ, he has directed hundreds of investigations for many high-profile collapses and structural failures, and complex investigations related to capacity, deterioration, and repair with multiple disputes involving a variety of complaints.

A significant portion of Mr. Guedelhoefer's work has involved the evaluation and repair of distressed or aged structures. These projects have required designs of specialty forming and shoring systems and innovative repair solutions.

An expert witness, he has assisted owners, contractors, architects, engineers, insurance companies, governmental agencies, and attorneys providing legal strategy, litigation support, consultation on the use of experts, and deposition and trial testimony on numerous matters.

Previously, he served as Manager of Structural Engineering Services for a global forensic consulting firm for ten years. His projects involved investigations to determine failure causation or collapse, rehabilitation, or unique original design, and expert witness. He managed a variety of research, testing, design, and investigation projects, including major collapses and hundreds of building and bridge performance evaluations.

■ EDUCATION

Master of Science in Civil Engineering
Oklahoma University

Bachelor of Science in Civil Engineering
Purdue University

■ REGISTRATIONS

Licensed Structural Engineer in Illinois

Licensed Professional Engineer in Alaska, Colorado, Connecticut, Delaware, District of Columbia, Florida, Guam, Hawaii, Indiana, Kentucky, Maryland, Michigan, Minnesota, Mississippi, New Jersey, North Dakota, Ohio, Pennsylvania, Rhode Island, South Carolina, South Dakota, U. S. Virgin Islands, Virginia, West Virginia, and Wisconsin

National Council of Examiners for Engineering and Surveying (NCEES)

Structural Engineering Certification Board (SECB)

■ PROFESSIONAL AFFILIATIONS

American Concrete Institute (ACI)

American Institute of Steel Construction (AISC)

American Society of Civil Engineers (ASCE), Fellow, Forensic Engineering Division, FED Committee on Publications, Associate Editor

Illinois Society of Professional Engineers / National Society of Professional Engineers (ISPE / NSPE)

International Code Council (ICC)

Structural Engineers Association of Illinois (SEAOI)

Structural Engineering Institute (SEI)

OTTO C. GUEDELHOEFER, S.E., F.ASCE

Principal

■ PUBLICATIONS

"Case Study: The Critical Role of Sealants in the Repair of a Fluid-Applied Roofing Membrane," *Durability of Building and Construction Sealants and Adhesives*: 5th Volume, W.J. Macicak, O.C. Guedelhoefer, K.D. Magnuson, and D.M. VanDommelen, ASTM STP 1583, L. Carbary and A.T. Wolf, Eds., ASTM International, West Conshohocken, PA 2015

"Using an Alternative Method of Analysis to Evaluate Punching Shear Capacity in Existing Pre-Tensioned Shear Reinforced Concrete Floor Slabs," Proceedings of the 2015 Structures Congress, Portland, OR, R.W. Kritzler, B.T. Lammert, W.J. Macicak, and O.C. Guedelhoefer, April 24, 2015

"Repair and Completion of a Damaged Cooling Tower," ASCE Journal, submitted for publication, P.L. Gould and O.C. Guedelhoefer, May 18, 1988

"To Bond or Not to Bond," *ACI Concrete International*, O.C. Guedelhoefer and A.T. Krauklis, August 1986

Comments on "Spandrel Beam Behavior and Design," *PCI Journal*, A.T. Krauklis and O.C. Guedelhoefer, V.G. Naidu, and C.H. Raths, September-October 1985

"Evaluation of Performance by Full-Scale Testing," ASTM International Symposium on Full Scale Testing of Structures, Philadelphia, PA, April 2, 1979; ASTM STP 702, O.C. Guedelhoefer and J. R. Janney, April 1980

"Minicomputers in Full-Scale Structural Testing," *Journal of the Technical Councils of ASCE*, Vol. 105, No. TC1, pp.103-111, O.C. Guedelhoefer and S.G. Pinjarkar, April 1979

"Structural Design of Tall Concrete and Masonry Buildings," Chapter A38 - Model Analysis, Contributor March 1976

■ PRESENTATIONS

"Securing the Site and Preserving the Evidence / Dealing with OSHA and Other Government Agencies," American Bar Association Litigation Section, Regional CLE Workshop: Handling a Construction Failures Case O.C. Guedelhoefer, Panelist, Philadelphia, PA, June 3, 2016

"Analyzing Causation, Proposing a Fix, Economic Waste, Betterment and Related Damages Issues," American Bar Association Litigation Section, Regional CLE Workshop: Handling a Construction Failures Case, O.C. Guedelhoefer, Panelist, Philadelphia, PA, June 3, 2016

"When 1 Test Is Worth More Than 10 Expert Opinions," Construction SuperConference, O.C. Guedelhoefer, B.T. Lammert, and Louis Cairo, San Diego, CA, December 7-9, 2015

"Navigating Construction Failures," 2014 Construction SuperConference, Las Vegas, NV, Panelist, Dec. 2014

"Construction Failures and Defects - Parking Garages," Mealey's Construction Litigation Conference, May 20, 2008

"Engineering Disasters - 9 Rosemont Collapse," History Channel, Modern Marvels, December 10, 2004

"Current Trends in Failures of Civil Engineering Structures," ASM Materials Week '94, Seminar on Analysis of Civil Structural Failures, October 5, 1994

"Management & Organization of Structural Failure Investigations," University of Wisconsin-Extension, Madison, WI, November 3 and 4, 1987

OTTO C. GUEDELHOEFER, S.E., F.ASCE

Principal

■ PRESENTATIONS

"Typical Recurring Problems with Parking Structures," ASCE Structures Congress, Chicago, IL, September, 1985

"Observations Made During the Repair of a Tornado-Damaged Cooling Tower," International Symposium on Natural-Draught Cooling Towers, University of Bochum, Bochum, West Germany, September 5-7, 1984

"Methods for Strength Evaluation of Distressed Structures," ASCE Conference, St. Louis, MO, October 26-27, 1981

"Project Management," Evaluation of Structural Failures, University of Wisconsin-Extension, Madison, WI, May 12, 1983

"Repair of Cracks in Structural Concrete," American Concrete Institute Convention, Detroit, MI, O.C. Guedelhoefer and R.J. Rioux, September 23, 1982

"Stability Investigation Based on In Situ Geometry," ASME/ASCE Conference, Boulder, CO, P.L. Gould and O.C. Guedelhoefer, June 22, 1981

"Recurring Causes of Construction Failures," ASCE Conference, New York, NY, T.L. Rewerts, R.J. Kudder, and O.C. Guedelhoefer, May 1981

"Evaluation and Repair of Tornado-Damaged Cooling Tower," American Concrete Institute (ACI) Convention, O.C. Guedelhoefer, P.L. Gould, and A.L. Parme, April, 1981

"Evaluation of Performance by Full-Scale Testing," ASTM International Symposium on Full Scale Testing of Structures, Philadelphia, PA, O.C. Guedelhoefer and J. R. Janney, April 2, 1979

"Instrumentation & Techniques of Full-Scale Testing of Structures," American Concrete Institute (ACI) Convention, Washington, D.C., October 1979

"Correlation of Load Testing With Design," O.C. Guedelhoefer and C. H. Raths, May 17, 1979

"Consequences & Reasons for Breakdown of Quality Assurance," ASCE Georgia Section Annual Meeting, Atlanta, GA, December 1, 1978

"Full-Scale Testing of an Elevated Rapid-Transit Structure," ASCE Convention, Pittsburgh, PA, O.C. Guedelhoefer, J.R. Janney, and D. Boggs, April 24-28, 1978

"Practical Applications of Minicomputers in Full-Scale Structural Testing," ASCE National Convention, San Francisco, CA, O.C. Guedelhoefer and S.G. Pinjarkar, October 17-21, 1977

"Dynamic Response Method for Structural Evaluation," ASCE Convention, San Francisco, CA, O.C. Guedelhoefer, J.R. Janney, and J.F. Wiss, October 17-21, 1977

"Computer Applications in Full-Scale Structural Testing," ASCE Specialty Conference in Structural Engineering Practice, Montreal, Canada, O.C. Guedelhoefer, R.J. Kudder, and S.G. Pinjarkar, October 6-7, 1977

"Static Load Testing of Concrete Structures in Accord with U. S. Building Code," International Symposium on Testing In Situ of Concrete Structures, Budapest, Hungary, O.C. Guedelhoefer, J.R. Janney, and J.M. Hanson, September 12-15, 1977

OTTO C. GUEDELHOEFER, S.E., F.ASCE

Principal

■ PRESENTATIONS

"The Use of Experimental Stress Analysis Techniques with Civil Engineering," Society for Experimental Stress Analysis, Indianapolis, IN, October 1974

"Benefits of Model Studies to the Design Process," ASCE Structural Meeting, Cincinnati, OH, O.C. Guedelhoefer, A. Moreno, and J.R. Janney, April 1974

"Small-Scale Models of Buildings for the Study of Structural Behavior," Symposia/Engineering Study, April 1969

ATTACHMENT 2

Fru-Con
Balfour Beatty

September 15, 2016

Fru-Con Construction, A Division of
Balfour Beatty Infrastructure, Inc.
3601 Leo Street
Baltimore, MD 21226

410 355 2451
www.bbiius.com

Mr. Azzam Ahmad, P.E.
Chief Engineer
Office of Engineering and Construction
Room, 900, Abel Wolman Building
Baltimore, MD 21202

Attention: *Azzam Ahmad, P.E.* FC-BC-345

Reference: Sanitary Contract 852R

Subject: BBII/Fru-Con's Filter Leak Claim and RKK's Deficient Design

Dear Mr. Ahmad:

After four (4) years of struggling to contend with RKK's deficient design, BBII/Fru-Con received Raths, Raths, & Johnson, Inc.'s ("RRJ") "Evaluation of Concrete Construction Deficiencies." In his letter of August 25, 2016, Thak Bakhru requested BBII/Fru-Con and RKK provide responses to RRJ's report by September 16, 2016. BBII/Fru-Con has reviewed RRJ's report as requested and accept RRJ's conclusion that RKK's flawed design of the contraction and expansion joints is the root cause of the leaks that occurred in the DNF Structure. BBII/Fru-Con disagrees with RRJ statements concerning construction deficiencies potentially contributing to the leaks experienced. RRJ cites no credible evidence in regards to any such construction deficiencies and specifically acknowledges that any common construction deficiencies which occurred were resolved to the City's and RKK's satisfaction. In sum, RRJ's Report supports BBII/Fru-Con's Filter Leak Claim.

RKK's Expansion/Contraction Joint Design Deficiencies

1. In its report, RRJ states: "The improper design has caused joint cracking and subsequent joint leakage." See RRJ Report, p.2. BBII/Fru-Con agrees. Attached is BBII/Fru-Con's engineering expert, Wiss, Janney, Elstner Associates, Inc. ("WJE") Technical Comments concerning the RRJ Report. WJE also confirms that RRJ is in agreement with WJE's opinions concerning RRK's deficient design being the root cause of the leaks at the DNF structure. See Attached Technical Comments from WJE dated September 9, 2016.

2. Based upon the findings and conclusions reached, RRJ's report is incorrectly titled "Evaluation of Concrete Construction Deficiencies." The report should be titled "Evaluation of RKK's Deficient Design of Expansion and Contraction Joints.

3. In its report, RRJ notes that RKK's engineer, A+F Engineers, Inc., improperly used AASHTO standards for its engineering evaluation of RKK's expansion and contraction joint design. "The use of AASHTO shear capacity calculation method is not customary or proper

for use in the design of wastewater treatment plant shear keys." See RRJ Report, p.8. BBII/Fru-Con is unable to comment on RRJ's opinions concerning A+F's November 21, 2014 report because the City has not provided BBII/Fru-Con with a copy of the report notwithstanding BBII/Fru-Con's request that it be provided. However, given the comparison RRJ made between WJE's analysis and the A+F's analysis, BBII/Fru-Con accepts RRJ's ultimate opinion – WJE's analysis is correct and A+F's is not.

4. BBII/Fru-Con offers no comments regarding the structural integrity of RKK's design except to note that the joint at the base of the Y-Wall is a construction joint and not a moveable joint. Reinforcing steel extends from the wall through the joint into the base slab.

Common Construction Deficiencies did not Contribute to Leakage

1. In its report, RRJ addresses two distinctly different construction "issues:" (1) Concrete deficiencies which commonly occur when concrete is placed; and, (2) Alleged deficiencies in forming of the keyways during placement of concrete. As to the first, RRJ states: "Project documents reviewed by RRJ indicate that where common construction defects were identified, repairs were performed to achieve compliance with the project specifications." BBII/Fru-Con agrees. Any common construction defects were remedied to the City's and RKK's satisfaction during the course of the Project. These defects did not contribute in any way to the leakage experienced at the expansion and contraction joints.

2. In its report starting on page 11, RRJ discusses early confusion among the City, RKK, BBII/Fru-Con and WJE concerning the method and manner in which the concrete keyways for the expansion and contraction joints were formed. As set forth in BBII/Fru-Con's September 2014 report, the concrete keyways for the expansion and contraction joints were uniformly constructed with a taper. RRJ verified BBII/Fru-Con's position in its report. "Fru-Con's later claim was corroborated by [City Inspector] Mr. Biono who reported that the tapered keyway was typical of all joints in the facility." See RRJ Report, p.12. RRJ also observed tapered keyways during its visit to the Project site.

3. In its report, RRJ states: "However, Robert Nash (Senior Project Manager for the City) reported that the majority of keyways were constructed without incorporating proper key-forming inserts in the formwork." The statement attributed to Mr. Nash is neither credible nor supportable. All documentary evidence including photographs demonstrate the consistent use of tapered forms for the keyways.

Additionally, Mr. Nash has no personal knowledge to support the statement attributed to him. He was not involved with the Project or onsite when the concrete work discussed was placed.

4. On page 12 of its report, RRJ addresses SIRs 42 and 44 and suggests that these joints contributed to the leaks in the facility. The joints at issue in SIRs 42 and 44 are construction joints, not moveable joints. The joints are located at the top of the Y-Wall and have reinforcing steel running through the joint. Therefore, the issues addressed in SIRs 42 and 44 fall in the category of common construction deficiencies which did not contribute in any way to the leaks in the facility. Moreover, these common construction deficiencies were remedied during the course of the Project to the satisfaction of the City and RKK.

5. Based on RRJ's report, a full examination of the Project documents, and observation of the City Inspector onsite during concrete placement, BBII-Fru-Con's construction practices did not contribute to any of the leaks in the facility.

CIM 1000 is Appropriate

1. In its report, RRJ states that the CIM 1000 "has temporarily provided leakage control but will require substantial ongoing maintenance and inspection..." See RRJ Report, p.12. BBII/Fru-Con disagrees with RRJ's findings and refers to WJE's comments regarding CIM 1000.

2. Even if RRJ's conclusion regarding CIM 1000 is accepted, any costs associated with maintenance and inspection are RKK's responsibility because RKK's "improper design [of the joint and shear key] has caused the joint cracking and subsequent joint leakage." See RRJ Report, p.11

BBII/Fru-Con has suffered under RKK's flawed design for years and at the cost of millions of dollars. The City has also subjected BBII/Fru-Con to liquidated damages for delays to completion of the Work which are irrefutably RKK's responsibility. BBII/Fru-Con again demands the immediate

Fru-Con
Balfour Beatty

return of all liquidated damages assessed including those for SC 845R, together with accrued interest. (Without a completed SC 852R Project, SC 845R cannot function). Lastly, BBII/Fru-Con demands a commensurate extension of time and reimbursement of all costs – direct and time-related – which BBII/Fru-Con needlessly incurred in attempting to remedy RKK's failed design.

Regards,

Mark Johnnie
Vice President & Region Manager
Balfour Beatty Infrastructure Inc.

Enc

CC: Robert Nash (OEC);
Robert J. Andryszak (RK&K);
Jeff Kracun (BBII);
file

WJE | ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

Wiss, Janney, Elstner Associates, Inc.
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Northbrook, Illinois 60062
847.272.7400 tel | 847.291.4813 fax
www.wje.com

Via E-mail
gsm@martinhild.com

September 9, 2016

Gregory Martin, Esquire
Martin Hild, P.A.
555 Winderley Place, Suite 415
Maitland, FL 32751

Re: Technical Comments on
RRJ Report dated August 19, 2016
Patapsco Water Treatment Plant
Baltimore, Maryland
WJE No. 2012.1200.4

Dear Mr. Martin:

At your request, we have reviewed the August 19, 2016 report "Evaluation of Concrete Construction Deficiencies" for the above-referenced structure, prepared by Raths, Raths & Johnson, Inc. (RRJ) and have the following comments:

1. Joint Design Deficiencies

a. Shear Capacity at Base of Y-Walls

The joint at the base of the Y-walls is a construction joint and not a movement joint. The vertical reinforcing bars that run from the base slab through this joint on each face of the Y-wall take all shear forces from the unbalanced water loads. It appears that this keyway was placed by the designer only to accommodate placement of a waterstop.

The shape of the keyway and lack of reinforcement in the male key does not diminish the ability of the wall to resist shear forces. Therefore, we disagree with RRJ's opinion that the unreinforced horizontal keyway at the base of the Y-wall presents a potentially hazardous condition.

b. Waterstop

We agree with RRJ's conclusions regarding the location and design of the waterstop and their contribution to leakage through the joint.

c. Shear Reinforcement

We agree with RRJ's conclusion that lack of steel reinforcing through the concrete keyway has likely exacerbated the size and propagation of cracks at the base of the male and female keys.

d. Shear Key Geometry Around the Sump Trough

We agree with RRJ's analysis and conclusions that the configuration and design of shear keys at the sump trough could not accommodate expected differential movements and were responsible for joint failures at these locations.

e. Design Capacity

We agree with RRJ's conclusions that the design capacity of the unreinforced male keys was inadequate.

2. Joint Construction Deficiencies

a. Keyway Forming Issues

Tapered keyway conditions were addressed by Fru-Con and WJE in past correspondence. We only want to point out that the photograph of the female side of the gouged keyway joint depicts the horizontal keyway at the Y-wall. As stated earlier in this letter, this is not a moving joint but a construction joint and therefore the rough-formed surfaces only enhance the bond between the concrete pours below and above the joint.

b. Shear Key Projection

We agree with RRJ's opinion about the Y-wall vertical keyway projection.

3. Common Deficiencies

It is our understanding that all commonly occurring construction deficiencies were repaired in accordance with the project specifications.

4. Leakage Remediation

Large-scale application of the CIM 1000 coating system in several areas of the walls was not due to watertightness issues of the substrate but because the subcontractor for installation of CIM 1000 was required to repair his original faulty installation and he overcoated portions of the walls during the corrective work.

According to the manufacturer, the CIM 1000 coating application is supposed to last the life of the structure. No special or frequent maintenance is required. During the scheduled emptying of the tanks for their regular maintenance, the SIM locations should be inspected and addressed if necessary.

If you have any questions about this report, please contact us.

Very truly yours,

WISS, JANNEY, ELSTNER ASSOCIATES, INC.

Andy Osborn, S.E., P.E.
Senior Principal

Predrag Popovic

Predrag L. Popovic, P.E., S.E.
Vice President and Senior Principal

ATTACHMENT 3

EVALUATION OF CONCRETE CONSTRUCTION ISSUES
SUPPLEMENTAL REPORT

PATAPSCO WASTE WATER TREATMENT PLANT
DENITRIFICATION STRUCTURE

BALTIMORE, MARYLAND

Prepared For:

Baltimore City Law Department
100 North Holliday Street
Suite 101
Baltimore, Maryland 21202

Prepared By:

Raths, Raths & Johnson, Inc.
500 Joliet Road, Suite 200
Willowbrook, Illinois 60527-5618
630.325.6160
www.rrj.com

RRJ 14099

March 9, 2017

3/9/2017

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 14569, Expiration Date: September 2, 2017.

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EVALUATION OF CONCRETE CONSTRUCTION ISSUE
SUPPLEMENTAL REPORT
PATAPSCO WASTE WATER TREATMENT PLANT DENITRIFICATION STRUCTURE
BALTIMORE, MARYLAND

INTRODUCTION

Raths, Raths & Johnson, Inc. (RRJ) was retained by the City of Baltimore, Maryland, to perform an engineering evaluation of issues encountered during the construction of the concrete Denitrification Filter (DNF) structure at the Patapsco Waste Water Treatment Plant located in Baltimore, Maryland. The following report supplements RRJ's report dated August 19, 2016. Project documentation describing project background, chronology, and the factual basis and opinions of RRJ and others, was previously reported and is not reproduced in this supplemental report. It is assumed that readers are familiar with the project documents produced to date. A complete listing of documents reviewed is included in Appendix A. Refer to Figures 1 through 3 of RRJ's August 19, 2016 Report for basic location/geometric information. The information included herein is provided with a reasonable degree of engineering certainty. RRJ's findings are based on the review of documentation made available as of the date of this report, its site observations, and its Finite Element Method (FEM) modeling conducted to date. RRJ reserves the right to amend these findings should additional relevant information be made available.

Rummel, Klepper & Kahl, LLP (RK&K) and Fru-Con Construction, LLC (Fru-Con), through their respective consultants, A+F Engineers, Inc. (A+F) and Wiss, Janey, Elstner Associates, Inc. (WJE), both have indicated the opinion that cracked shear keys throughout the DNF structure allowed water to bypass the embedded waterstops, and this defect is at least partially responsible for the water test failures and the resultant need for the extensive remediation that has been performed. WJE alleges the

key cracking is caused by improper design, and A+F alleges cracking is caused by improper construction. RRJ's supplemental report is intended to further clarify this and other disputed issues related to shear key demand, shear key capacity, and miscellaneous concrete construction defects. Results of RRJ's FEM modeling of concrete assemblies, including portions of the base slab and Y-walls that incorporate shear keys and movement joints, and other technical analyses, are included.

The project records contain numerous photographs and field reports describing concrete surface cracks, other concrete defects, and water leakage at joints. As previously reported, nondestructive testing results indicated cracking at concealed male shear keys in numerous locations throughout the DNF structure. However, visual confirmation of the actual condition of concealed male shear keys is limited to a few instances investigated by WJE in 2012. The quantity of actual physical evidence is likely inadequate to provide statistically relevant findings that could be extrapolated throughout the DNF structure. Therefore, if it becomes necessary to quantify hidden defects in order to resolve this dispute, further destructive testing will likely be required.

MODELING AND ANALYSIS

To better understand and evaluate the DNF structural behavior, RRJ performed a series of FEM analyses between December 2016 and February 2017 using SAP2000 structural software. A representative portion of the base slab system, which includes the keyway that transitions around the sump pit, was modeled utilizing 3D solid elements. RRJ developed separate full-length model of a single filter cell incorporating two Y-walls that was also composed of 3D solid elements, including the Y-wall keyways. A detailed description of RRJ's FEM models is provided in Appendix B of this report. Objectives of RRJ's modeling are outlined below:

- Evaluate the validity of previous modeling performed by A+F and WJE.
- Evaluate A+F's assumptions regarding average shear stress distribution and horizontal restraint within the base slab.
- Evaluate WJE's assumptions regarding temperature strains caused by concrete cooling and shrinkage.
- Evaluate and compare A+F and WJE allegations regarding shear key demand and capacity.

RRJ modeled shear keys and incorporated the material properties of the waterstop, which was excluded in A+F's modeling approach. RRJ's Y-wall model incorporated the end walls similar to the approach taken by A+F. WJE did not model the end walls.

SUMMARY OF FINDINGS

Table 1 summarizes the output from the various FEM models and the predicted capacities. The differences in capacities are based on the interpretations by each expert of different standards and research, and are discussed in more detail in the proceeding sections of this report.

Table 1. Summary of Analysis Results* (psi)

		RRJ	A+F	WJE
Shear in the Base Slab Shear Key	Demand	500	135	>700
	Capacity	<340	700	77
Tension in the Base Slab Shear Key	Demand	800	-	>1400
	Capacity	435	-	349
Shear in the Y-wall Shear Key	Demand	100	87	113
	Capacity	<370	805	89
Tension in the Y-wall Shear Key	Demand	103	-	-
	Capacity	503	-	-

*Boxed areas represent areas where demands were found to exceed the capacities.

Maximum stresses in the base slab shear key were located in RRJ's model at the vertical portion of the key that transitions the two horizontal keys around the sump pit. At the reentrant corner of the base of this vertical key, shear and tensile demands were found that exceed RRJ's calculated shear and tensile capacities. This finding indicates that, as-designed, the male shear keys in the base slab may crack even when properly constructed. In RRJ's Y-wall model, maximum stresses were located at the top of the key. These demands were found to be less than RRJ's calculated capacities, and RRJ does not expect cracking to occur at this location when constructed properly. RRJ's modeling output is shown in Figures 1 through 5.

RESPONSES TO SPECIFIC ALLEGATIONS IN A+F AND WJE REPORTS

Issue 1: Capacity of DNF Shear Keys

Description

Shear capacities of the DNF shear keys, as estimated by each expert, are summarized in Table 1. The large differences between the experts' estimations result from the use of differing research as the basis of their calculations. The building code does not directly address the calculation of shear key capacity at structures similar to the DNF facility. Therefore, each expert has apparently attempted to apply rational engineering judgment in its approach, as is discussed below.

RK&K/A+F

A+F predicts the shear capacity of the DNF shear keys by using an approach outlined in an American Association of State Highway and Transportation Officials (AASHTO) method that is intended to estimate shear key capacity between segmental bridge sections[1]. Based on this model, the shear strength of the concrete at 75 percent compressive strength is about 700 psi[2]. A+F does not agree with the approach taken by WJE, which utilizes the shear capacity calculation methods prescribed in American Concrete Institute *Building Code Requirements for Structural Concrete and Commentary* (ACI 318). A+F indicates that, in the case of the DNF shear keys, a direct shear is developed and the mechanism of shear failure outlined in ACI 318 does not properly correspond. A+F presents several research studies that relate to the AASHTO method as a basis for its applicability to the DNF shear keys.

Fru-Con/WJE

WJE predicts the shear capacity of the DNF shear keys by using the shear capacity of plain concrete as outlined in ACI 318, wherein allowable shear forces are a small fraction of those allowed by the AASHTO segmental bridge model. WJE estimates the shear strength of the concrete at 75 percent

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[1] *Guide Specifications for Design and Construction of Segmental Concrete Bridges*. Washington, D.C.: AASHTO, 199/2003.
[2] Per WJE August 28, 2014, report estimate for percentage of full concrete strength after dissipation of heat of hydration.

compressive strength is 77 psi. As of the date of this report, WJE has not commented on A+F's claim regarding the use of the AASHTO method.

RRJ Discussion/Analysis

The beam shear model, on which the ACI 318 method for calculating shear capacity is based, assumes the shear occurs across an unrestrained failure plane. The failure plane for the DNF shear keys is partially restrained and, therefore, the ACI 318 allowable beam shear capacity values are conservative.

The AASHTO method, on which A+F's assessment of shear capacity is based, is nonconservative, considering that the DNF shear keys comprise conditions significantly dissimilar to those assumed for segmental bridge design and the associated research provided by A+F. These conditions will be further discussed below.

RRJ agrees with the statement made by Koseki and Breen[3] that the provisions provided in ACI 318-77 Section 11.9 for corbels are "somewhat analogous" to the behavior expected in single shear key joints. Geometry and loading parameters required for the use of these provisions are met by the DNF shear keys. The research by Kriz and Raths[4] is based on numerous tests with different sizes and shapes, tension reinforcement and stirrups, concrete strengths, and loading conditions performed to develop empirical expressions for the shear strength of corbels. In these provisions, reinforcement of the corbel is always considered, and Kriz and Raths indicate that a minimum amount of tension reinforcement and stirrups should be provided. The DNF shear keys do not contain reinforcing steel. Hence, the provisions of ACI 318-77 can only provide an upper bound of shear strength for the DNF shear keys with the expectation that the actual strength will fall somewhere below this upper bound. Using the minimum tension reinforcement ratio indicated by Kriz and Raths of $\rho_v = 0.004$ and ACI 318-77 Eqn. 11-32, the shear capacity of the DNF shear keys at a compressive strength of 3,375 psi is likely less than 340 psi as shown below:

$$v_n = 6.5\left(1 - 0.5\frac{a}{d}\right)(1 + 64\rho_v)\sqrt{f'_c} = 6.5\left(1 - 0.5\frac{4.5"}{8"}\right)(1 + 64 * 0.004)\sqrt{3375\ psi} = 340\ psi$$

[3] Koseki, K., and J. E. Breen. *Exploratory Study of Shear Strength of Joints for precast Segmental Bridges.* Research Report No. 248-1. Austin, Texas: Center for Transportation Research, U of Texas, 1983.
[4] Kriz, L. B., and C. H. Raths. "Connections in Precast Concrete Structures—Strength of Corbels." *PCI Journal* 10.1 (1965): 16-61.

As previously stated, the DNF shear keys contain several differing conditions compared to the keys considered by AASHTO and associated research provided by A+F. For example, the DNF shear keys are unreinforced single keys, as opposed to multiple rows of shear keys in the segmental bridge model. In the experimental studies conducted by Koseki and Breen, both large, single key configurations and multiple rows of keys are tested and result in similar capacities. However, the single key configuration tested in this study does not correspond to the conditions present at the DNF structure. The following highlight the differences between the tested keys and the DNF keys:

- Tested keys were reinforced with 10-gauge wire reinforcement, which follows the general shape of the male key projection and crosses the shear plane. No such reinforcement was present within the DNF male shear keys.
- Tested keys incorporate a depth to width (Figure 6) ratio approximately two and one-half times less than the keys in question at the DNF structure. The DNF shear keys projected further than the tested keys.
- Waterstops were not included in these tests. RRJ modeling has shown that the relative compressibility of the waterstop within the center of the DNF shear keys allows tensile stresses due to bending to develop.
- Segmental bridge joints are generally held together in compression. Prestressing forces were applied to the single shear key configuration during testing to simulate this condition. Compression in the joint can increase shear capacity. The DNF shear keys occur at joints that are subject to no such compressive forces.

The AASHTO method and associated research presented by A+F assumes the transfer of forces occur as a direct shear. However, the DNF shear keys were found to also exhibit bending behavior that creates tensile stresses. As outlined above, the DNF shear keys are not held in compression against the mating surfaces, are only partially restrained due to the compressibility of the waterstop, and are subject to bending. This behavior is consistent with a cantilever beam with relatively high tensile stresses occurring at the heel of the key. Tensile stresses exceeding the rupture threshold can form a crack near the corner of the key. Sustained loading may cause the crack to propagate in an uncontrolled manner, potentially bypassing the waterstop.

A+F incorrectly used a shear capacity equation taken from a publication by Curtis[5] to support its claim of high allowable shear capacity ($2 * f_t = 15\sqrt{f'c} = 870$ psi, $(f'_c = 3375$ psi$)$). According to the study, the correct equation is $2 * f_t = 2 * 1.22(f'c)^{\frac{2}{3}} = 9.9\sqrt{f'c} = 575$ psi $(f'_c = 3375$ psi$)$. Further, the Curtis equation is only valid at zero normal stress, which means that no tensile stresses from bending are present. As demonstrated in RRJ's modeling, tensile stresses develop in the DNF shear keys.

RRJ has not been provided calculations related to RK&K's design of the DNF shear keys. A calculation package dated November 2010, produced by RK&K and reviewed by RRJ, does not address shear key sizes, capacities, or anticipated loadings. RK&K provided cross-sectional details of shear keys with waterstops that were reportedly used successfully on other projects. RK&K has provided no documentation indicating that the shear keys at these other projects incorporated changes in direction, as occurs at the DNF structure sump pits. ACI 350.4R Section 5.1 indicates caution should be used when specifying shear keys in moving joints. The apparent lack of original design calculations for the shear keys is in conflict with ACI's recommendations.

Laboratory testing could be performed in order to validate the shear capacity of unreinforced single shear keys similar to those installed at the DNF structure.

Issue 2: Demands on DNF Shear Keys

Description

A+F, WJE, and RRJ each performed FEM modeling of the base slab and Y-wall movement joints in order to predict the loading demands (internal stresses) on the DNF shear keys. Although the experts' modeling approaches are similar, notable differences, including the configuration of end restraint conditions and the interpretation of stress distribution, are partially responsible for the variation of the demands reported by the experts.

[5] Curtis, D.D. "Estimated Shear Strength of Shear Keys and Bonded Joints in Concrete Dams." *31st Annual USSD Conference* (April 11-15, 2011). San Diego, California.

Fru-Con/WJE

WJE claims that relative movement between the male and female sides of the base slab movement joint will occur as the male slab cools and the heat produced from cement hydration dissipates. WJE applied a 20 degree temperature differential to their FEM model to determine the resultant demands on the shear keys. In the Y-wall model, WJE applied hydrostatic loads corresponding to the water test load in a single cell while the adjacent cells remained empty as a means of predicting demands on the keys in the Y-walls. The results of WJE's FEM modeling are summarized in Table 1.

RK&K/A+F

A+F claims that the demands imposed on the shear key will be resisted by direct shear behavior. In its October 10, 2016 report, A+F states "confinement of the shear key develops a direct shear at the root without any appreciable moment." A+F developed FEM models of both the base slab and the Y-wall movement joints. In its base slab model, A+F imposed a 20-degree temperature differential (as assumed by WJE) and found that "some localized higher shear stresses are located within fractions of an inch at the corner of the contact points, again under WJE's hypothetical conditions, however these are typically numerical errors. It is our opinion that average shear stresses are representative of the shear stresses in this hypothetical worst case condition."

A+F also reported stress demands in the Y-wall keyway that were derived from its model. The A+F Y-wall model incorporated end walls. The demands predicted by A+F are summarized in Table 1.

RRJ Discussion/Analysis

RRJ's modeling shows that the waterstop used in the DNF joints was compressible and, therefore, the key was subject to tensile bending stresses similar to a cantilever beam. RRJ's modeling incorporated the published modulus of elasticity of the PVC material comprising the waterstop, which is approximately 3000 times smaller than that of concrete, meaning that the material is relatively soft, flexible and compressible compared to concrete, resulting in the development of these bending stresses. Therefore, RRJ does not agree with A+F's modeling approach which ignores the effect of the waterstop.

RRJ disagrees with A+F's use of the average shear stress across the entire base of the shear key to derive its reported stress demand. Averaging of the stresses across the width of the shear key underestimates the actual peak stress at the reentrant corner where a crack is most likely to originate.

A stress peak or "stress riser" should be expected to occur at the reentrant corner of the shear key[6]. When the stress in this area of concrete exceeds the shear capacity and/or the modulus of rupture, a crack can form. The tip of the crack remains as a point of high stress, which is responsible for the rapid propagation of the crack after origination.

RRJ's modeling indicates that Y-wall joint shear key stresses do not exceed the shear capacity or the rupture threshold, and so cracking of the keys is not predicted under the maximum unbalanced hydrostatic load. This finding is consistent with RRJ's document review, which did not reveal evidence of leakage which was determined to originate at the vertical Y-wall joints. Therefore, based on RRJ's calculation of shear capacity, we disagree with WJE's findings regarding cracking at the top of the Y-wall.

Based on modeling results, RRJ considers it reasonable to assume that some areas within the base slab could experience temperature induced deflections large enough to induce cracking. Reference literature suggests that certain locations within the base slab may experience hydration temperature rise of as much as 60 degrees F, followed by a corresponding temperature reduction as the concrete hardens.[7] WJE assumed a uniform 20-degree temperature differential based on broad assumptions. Neither WJE, A+F, or RRJ have performed a rigorous thermal analysis that could clarify actual temperature changes experienced by the base slab during hydration.

RRJ's base slab modeling assumed a 20-degree temperature differential, for comparison with the other experts' models, resulting in maximum tension stresses of approximately 800 psi and maximum shear stresses of approximately 500 psi. These values were less than WJE's results and greater than A+F's calculated 135 psi average shear stress across the male key. (A+F rejects the presence of tension stress in the shear keys.)

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[6] Beer, Ferdinand P., E. Russell Johnston, John T. DeWolf, David F. Mazurek, and Sanjeev Sanghi. *Mechanics of Materials*. 5th ed. New York: McGraw-Hill, 2006. 107-108.
[7] ACI Committee 211. "Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete (ACI 211.1-91) (Reapproved 2009)."

RRJ modeling found that base slab stress concentrations occurred where the shear key changes direction from horizontal to vertical on either side of the sump pits. This finding was consistent with WJE's modeling results and with A+F's statement that restraint does occur in the base slab joint due to the joint's change in direction. The base slab key configuration puts the keys at risk of failure modes warned against by ACI.[8] RRJ believes the restraint in the joint is due to the as-designed configuration in this area and is likely responsible for the concentration of joint-related defects at the sump pits.

The sump pit sidewall cracks adjacent to movement joints are evidence of transverse forces present within the base slabs. The lack of reinforcement within the female side projection of the keyway exacerbated the severity of the cracks. However, while more effective placement of reinforcement may have limited crack sizes, it would not have prevented cracking. Cracking of the female key would not alone be responsible for excessive leakage rates, although they may contribute to leakage, particularly at locations where poor consolidation of the concrete around the waterstop may have occurred. Failure of the male key is the most likely cause of excessive leakage rates.

Issue 3: Shear Key Configuration

Description

Shear keys installed at expansion and contraction joints throughout the DNF structure are configured as a single, male projection within the center portion of the concrete thickness and designed to interlock with a female projection. Project records indicate that the female side of the joint was typically formed and placed first. The design drawings further indicate the key width was to be one-third the thickness of the concrete cross section, centered on the cross-section centerline, projecting one-sixth the thickness of the concrete cross section. The latter requirement was modified by RFI Response No. 366 to be a uniform 4½ inches. As a result, the shear key projection at Y-wall joints and the sides and bottom of the sump pits exceeded the original projection length. A waterstop was to be located at the centerline of the key.

Although the design drawings schematically depict the male key as a rectangular projection, RK&K's specifications indicate that a slight taper ("draft") was required for forming all projecting elements. In other words, the original project specifications required the use of tapered joints. During construction,

[8] ACI Committee 350. "5.1. Design Considerations for Environmental Engineering Concrete Structures (ACI 350.4R-04)."

Fru-Con's RFI 37, which relates to the use of "tapered" formwork to form shear keys, was accepted by RK&K. Fru-Con later indicated that the RFI was never implemented, citing costs.

RK&K/A+F

A+F claims that all cracking can be shown to be caused by improper construction based on the as-built concrete condition and the dovetailed shape of the male keys. Male keys formed in an improper shape will cause the joint to bind and crack during normal, anticipated structural movement. Additionally, if the concrete used to create the shear keys was below design strength, it may crack under normally anticipated shear loads. Cracks that allowed water to bypass the waterstop were identified as the primary cause of the water test failures. A+F also alleged that poorly consolidated concrete would allow water to find a path to bypass the waterstop through voids in the concrete.

Fru-Con/WJE

During early investigative work in 2012, WJE examined cracked concrete at two joints located in the sidewalls of sump pits. Excavation revealed that the cracks represented spalling of the female side of the keys and that the exposed male keys appeared to be cracked along the base. Measurements indicated the male key projections were reverse-sloped, causing the joint to bind and crack as joint movement occurred. WJE initially estimated that 50 percent of rectangular keys throughout the DNF structure could have been constructed with a slight reverse slope and still have met ACI geometric tolerances. In later reports, WJE revised its position based on review of project records, alleging that the majority of the keys had been constructed with a tapered form that would allow joint movement without binding. WJE's most current position is that the cracked male keys were caused by improper design based on its analysis and modeling, which relies on certain assumptions regarding concrete shear capacity, differential shrinkage rates, and other aspects of material behavior are discussed below.

RRJ Discussion/Analysis

RK&K should have rejected RFI 37 and directed the contractor to follow the original specifications, which required a drafted or tapered key. Per the specification language, Fru-Con was not allowed the option of providing an untapered key.

To the extent that the keys were formed in such a way as to prevent "free movement" of the joint (i.e., movement perpendicular to the plane of the joint), the joints were installed defectively and shear key cracking/joint leakage can be attributed to defective installation. The project documents, however, are unclear as to the extent to which the keys were improperly installed. Construction photographs reviewed by RRJ depicting typical formed keyway surfaces are inconclusive with regard to the inclusion of a draft, which may not have been discernable in photographs.

RRJ discussions with on-site city personnel revealed conflicting reports regarding the use of tapered key forming inserts. As pointed out by A+F, comments from field personnel occurred many years after the construction, making this information difficult to rely upon. Fru-Con's reported decision to forego the use of tapered keys does not, however, prove that the draft required by the original construction specification was excluded from the concrete construction.

Certain construction documents refer to improper keyways that were not formed. These are referenced within SIR 42 and RFI 37A, with Fru-Con proposing to remediate. The approach was approved by RK&K. These conditions occurred in horizontal wall construction joints with continuous steel crossing the joints, which were not movement joints, and to RRJ's understanding, were not identified as a discrete source of water leakage during water testing.

MISCELLANEOUS ISSUES

Issue 4: Curing

Improper curing could result in increased cracking, particularly on large exposed surfaces, such as the Y-wall surfaces. Failure to properly complete the specified curing method can cause rapid drying/moisture loss that could result in the initiation of plastic shrinkage cracks, failure of the concrete to achieve the full design strength, and increased shrinkage strain, resulting in larger, more numerous cracks. Confined, unexposed concrete, such as within the base slab at the depth of the shear keys, would not experience rapid moisture loss to the same degree as the exposed surfaces; therefore, these detrimental effects would not be expected to have an impact on these locations. Improper curing is not expected to be a substantial contributor to the joint leakage.

Issue 5: Rebar Placement

As stated in RRJ's previous report, placing reinforcement to cross the plane of the male shear key base would have helped limit the extent of the crack size at that location. However, reinforcement would not have prevented the crack from forming or stopped the water leak through the crack. A concrete crack forms before the tensile strength of the steel reinforcement is fully mobilized.

The design drawings for reinforcing in the vicinity of the sump pits are generally schematic and do not address the extra complication involved with maintaining adequate clear cover where the key is too thin to provide the required cover on opposite sides. Shop drawings were allegedly submitted and approved for reinforcing details, but have not been reviewed by RRJ. On other projects under similar circumstances, it would be expected that these types of issues would be resolved through the shop drawing review process.

Issue 6: CIM 1000 Repairs

RRJ has not opined that the CIM was an unsuitable choice for sealing leaking joints. The CIM 1000 repair material is a polyurethane-based sealant product, and in RRJ's experience, polyurethane-based sealant materials degrade over time, leading to increasing incidences of both adhesive and cohesive failures. Conventional building sealants exposed to ultraviolet light and weather have a typical life expectancy between 5 and 15 years. The basic CIM product warranty is for a 5-year period.

CONCLUSIONS

1. RRJ determined a reasonable estimate of the DNF shear key shear capacity at compressive strength of 3,375 psi is likely less than 340 psi. WJE's use of ACI 318 provisions is an overly conservative estimate of the shear capacity. A+F's use of the AASHTO method to determine shear capacities in wastewater treatment plant shear keys is overly nonconservative. If necessary, laboratory testing could be used to better validate shear capacity of concrete shear key assemblies similar to those constructed at the DNF facility.

2. Properly constructed male shear keys in the base slab of the DNF structure may be subject to shear and tensile demands large enough to produce cracking.

3. Properly constructed male shear keys in the Y-walls of the DNF structure are not subject to shear and tensile demands large enough to produce cracking.

4. Physical evidence detailing the condition and geometry of the concealed male shear keys is inadequate to provide statistically relevant findings that could be extrapolated throughout the DNF structure. Further destructive testing could be performed to quantify the defectively constructed male shear keys.

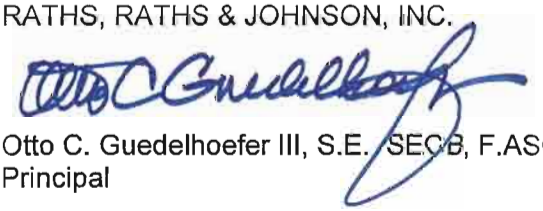
5. Improper curing may have contributed to crack formation and leakage through walls, but is not likely a substantial contributor to shear key cracking and joint leakage.

6. Rebar placement did not significantly impact the location or quantity of water leakage at the DNF structure.

7. The CIM 1000 repair material is a polyurethane-based sealant that will degrade over time and require maintenance.

Respectfully submitted,

RATHS, RATHS & JOHNSON, INC.



Otto C. Guedelhoefer III, S.E., SECB, F.ASCE
Principal

March 9, 2017

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FIGURES 1 THROUGH 6

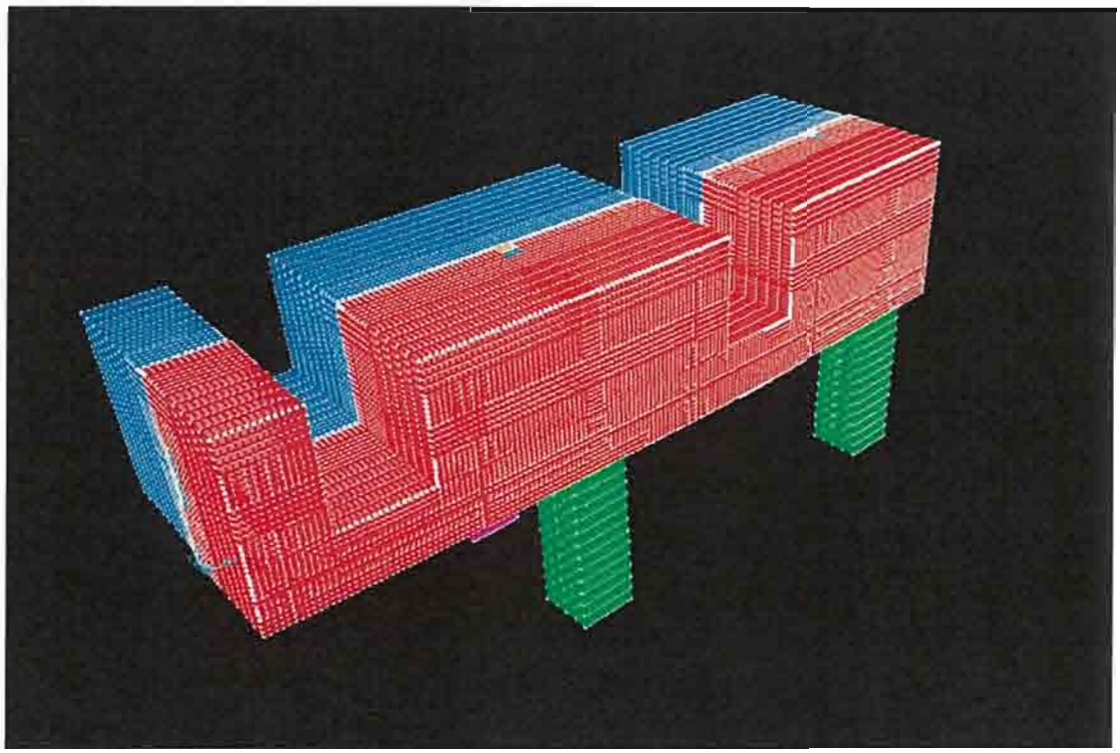
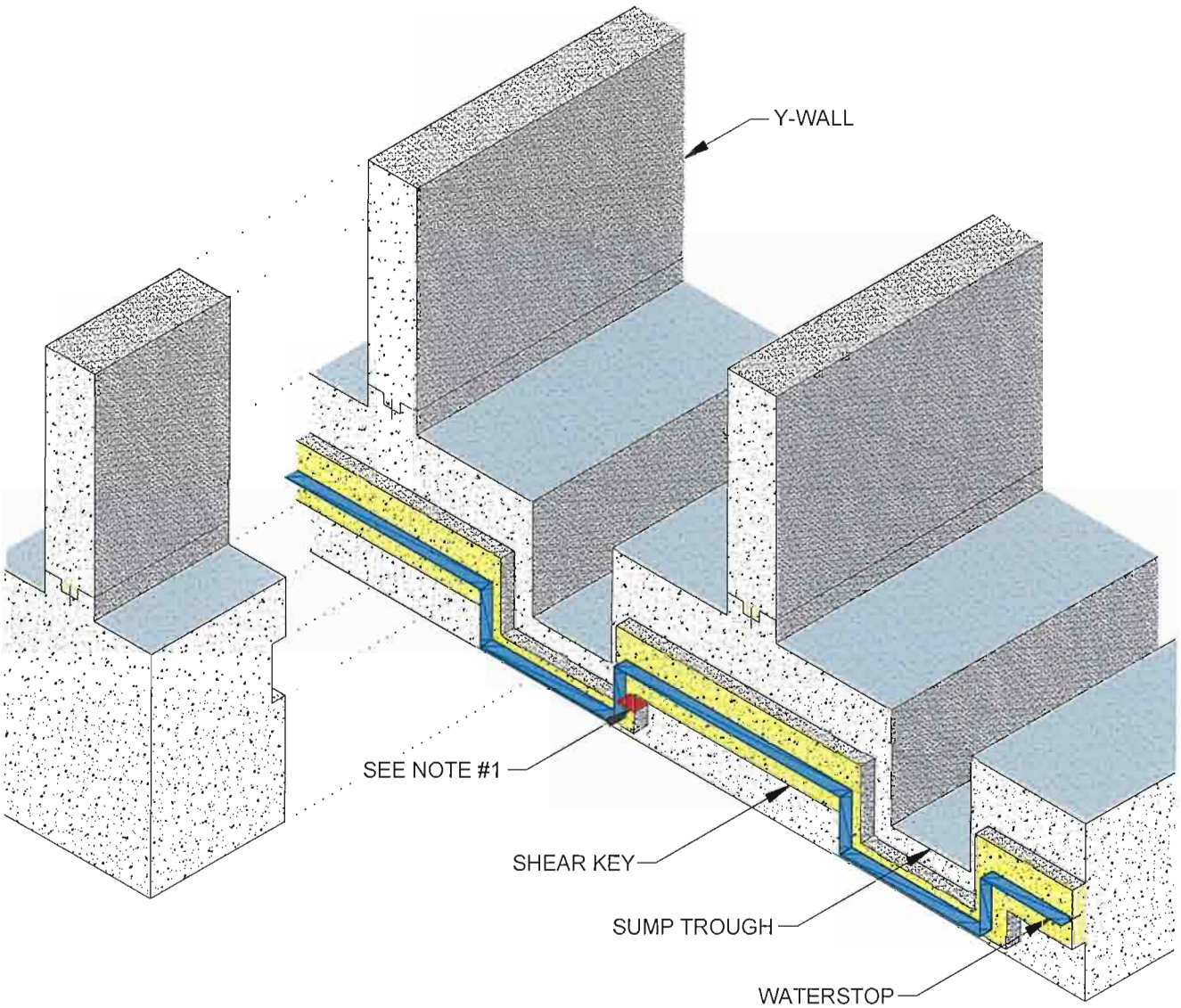


Figure 1. Overview of base slab model.



NOTES

1. LOCATION OF MAXIMUM SHEAR AND TENSILE STRESSES AT BASE OF VERTICAL SHEAR KEY.

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SHEAR KEY CONFIGURATION AT SUMP TROUGHS

PATAPSCO WASTE WATER TREATMENT PLANT

BALTIMORE MARYLAND

DATE:	03-08-17
SCALE:	N.T.S.
JOB #:	14099
DRAWN BY:	BAG
PRINCIPAL:	OCG
CHECKED BY:	WJM

2

FIGURE

C:\14099\Drawings\FIGURES\03-07-17\FIG 02 - Cross Section.dwg : Thursday, March 09, 2017 8:33:16 AM : Last Saved: Baglover (March 9, 2017) : Plot By: Brian Glover

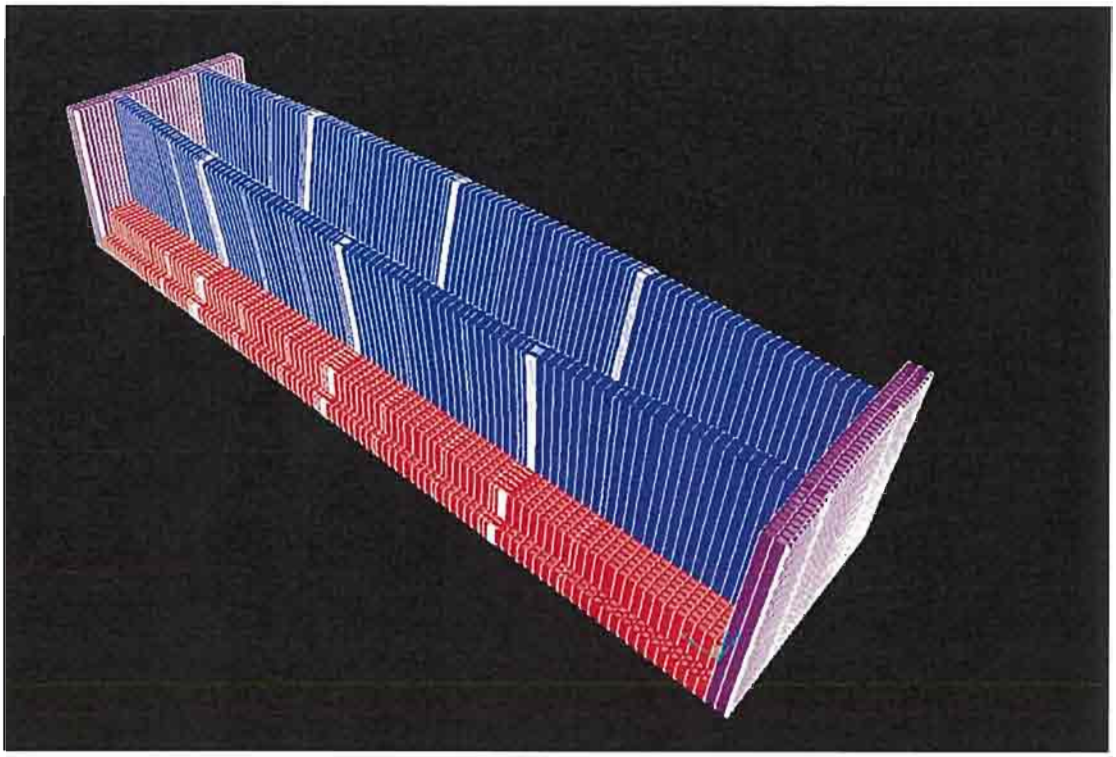


Figure 3. Overview of Y-wall model.

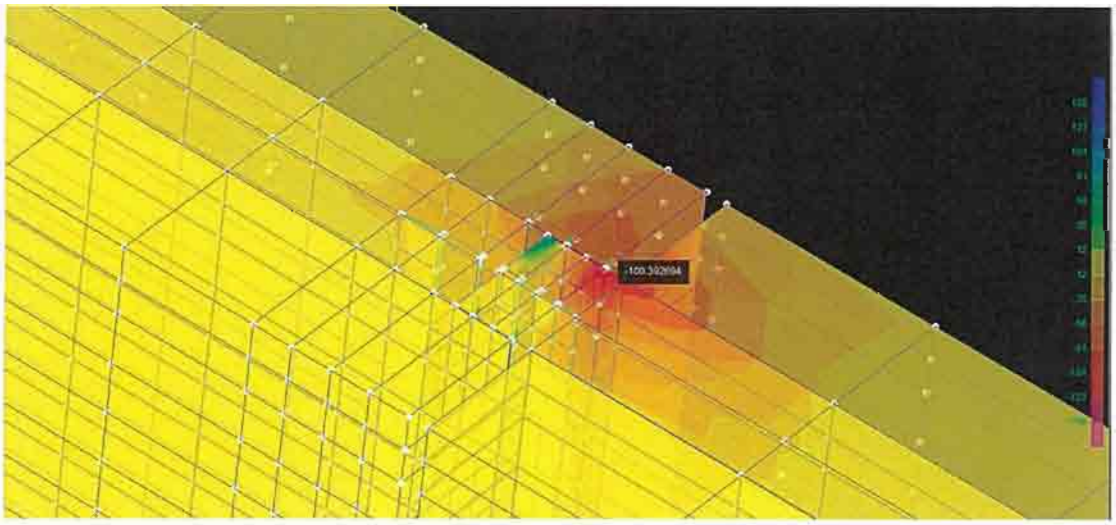


Figure 4. Location of maximum shear stress at top of Y-wall shear key.

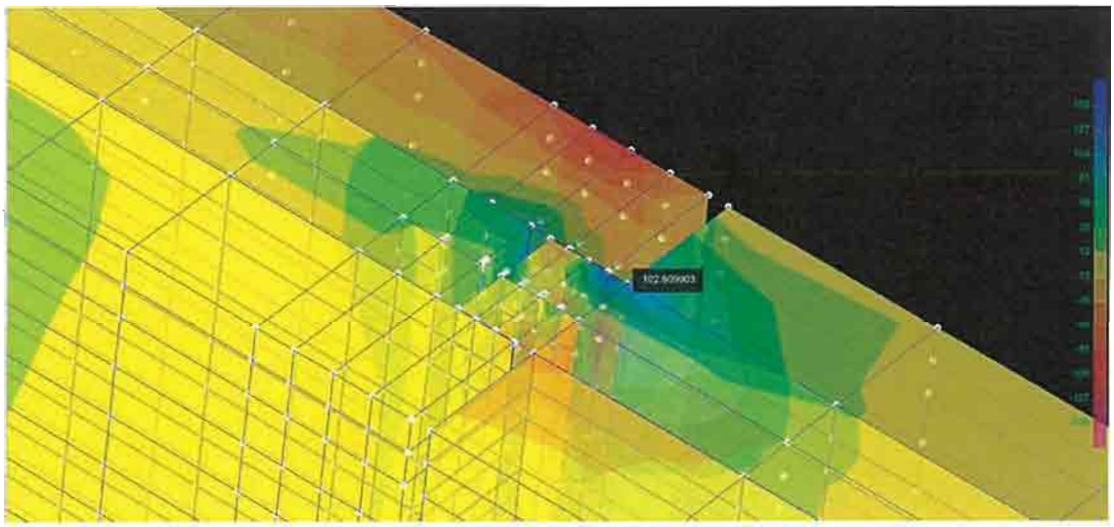
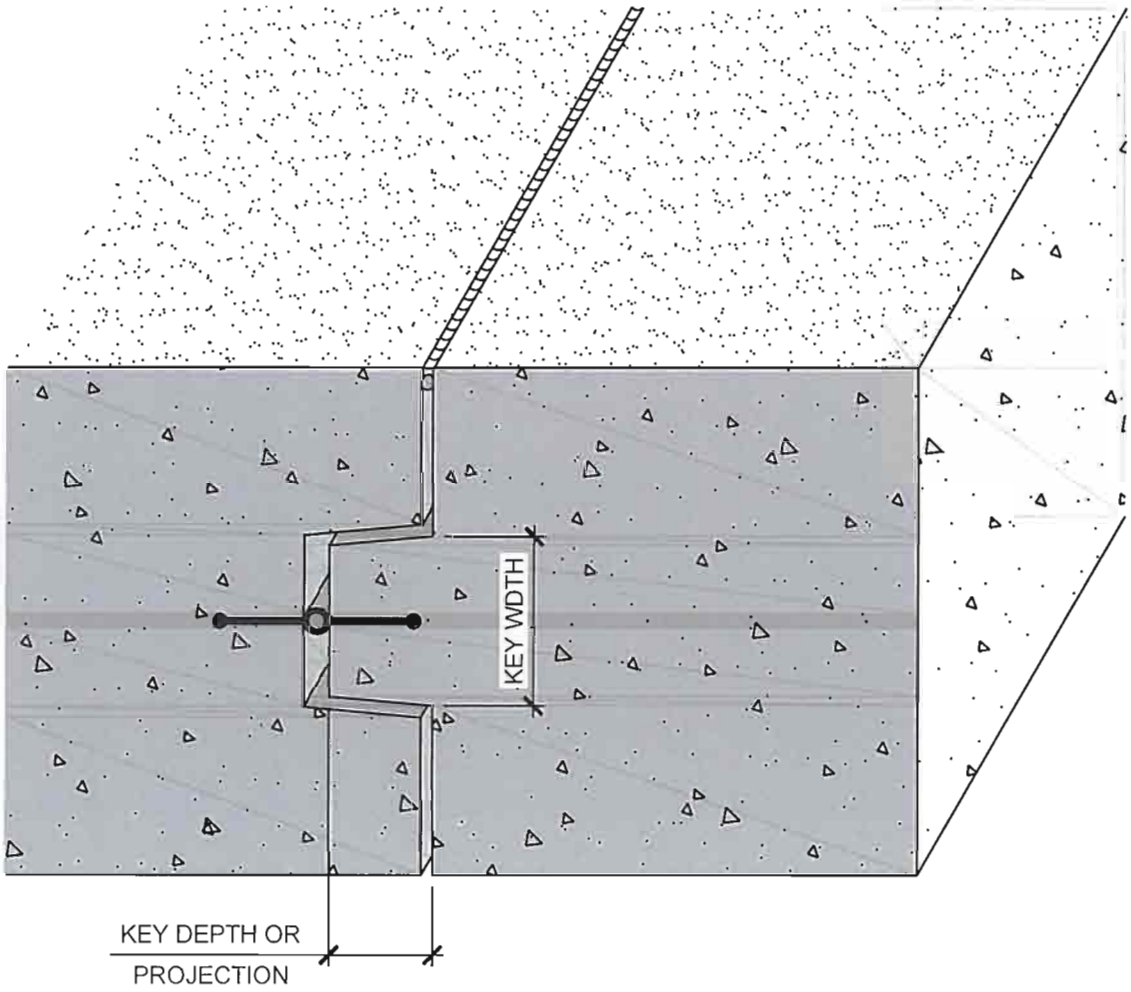


Figure 5. Location of maximum tensile stress at top of Y-wall shear key.



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KEYED JOINT IN CONCRETE

PATAPSCO WASTE WATER TREATMENT PLANT

BALTIMORE MARYLAND

DATE:	03-08-17
SCALE:	N.T.S.
JOB #:	14099
DRAWN BY:	BAG
PRINCIPAL:	OCG
CHECKED BY:	WJM

6

FIGURE

APPENDIX A

Documents Reviewed

DOCUMENTS REVIEWED

- A+F letter report dated September 16, 2016 and all attachments
- A+F letter report dated October 10, 2016 and all attachments
- RKK Contract Drawings Volumes 1 through 4 dated October 2009
- RKK Addendum No. 1 dated October 23, 2009
- RKK PowerPoint presentation dated September 12, 2014
- A+F formal report dated November 21, 2014 and all attachments
- RKK Structural Calculations Volume No. 1 dated November 2010
- City filter leak repair letter dated February 20, 2013 and all attachments
- City concrete claims outline document dated September 12, 2014 and all attachments
    - Attachment A: Concrete pre-construction meeting agenda dated September 23, 2010
    - Attachment B: Various special inspection reports (SIRs)
    - Attachment C: Various formal letters and correspondence from the City, RKK, and Fru-Con
    - Attachment D: Photographs
- Inspection photographs received during site visit on May 9, 2016
- Fru-Con filter joint repairs letter dated October 17, 2012 and all attachments
- Fru-Con filter joint waterstop submittals dated June 8, 2012, June 27, 2012, and July 9, 2012 and RKK response
- Fru-Con filter joint repairs cost proposal letter dated February 4, 2013 and all attachments
- Fru-Con appeal of claim denial letter dated March 18, 2013
- Fru-Con additional support documentation letter dated Apr. 3, 2013 and attachment
- Fru-Con formal report dated September 10, 2014 and all attachments
    - Ex. A: Concrete specific special inspection reports (SIRs)
    - Ex. B: Leak specific SIRs
    - Ex. C: Photographs
    - Ex. D: City response to request for information (RFI) no. 37A dated October 13, 2011
    - Ex. E: RKK response to RFI no. 37A dated October 13, 2011
    - Ex. F: Gibraltar Construction Services expert report dated August 29, 2014
    - Ex. G: RFI 366 dated January 31, 2011
    - Ex. H: WJE letter report dated August 28, 2014
    - Ex. I: Hanskat Consulting Group letter report dated September 8, 2014
- Fru-Con appeal letter to Bureau Head dated October 28, 2014.
- WJE letter report dated October 16, 2012
- WJE letter report dated August 28, 2014
- WJE letter report dated October 27, 2014
- American Concrete Institute, "Standard Specifications for Tolerances for Concrete Construction and Materials" (ACI 117-90) and Commentary (ACI 117R-90)
- American Concrete Institute, "Joints in Concrete Construction" (ACI 224.3R-95)
- American Concrete Institute, "Building Code Requirements for Structural Concrete Structures" (ACI 318-05) and Commentary (ACI 318R-05)
- American Concrete Institute, "Code Requirements for Environmental Engineering Concrete Structures" (ACI 350-01) and Commentary (ACI 350R-01)
- American Concrete Institute, "Tightness Testing of Environmental Engineering Concrete Structures" (ACI 350.1-01) and Commentary (350.1R-01)

- American Concrete Institute, "Design Considerations for Environmental Engineering Concrete Structures" (ACI 350.4R-04)
- RFI 366 correspondence
    - RFI 366 issued by Fru-Con on January 31, 2011
    - RKK response to RFI 366 dated February 23, 2011
    - City response to RFI 366 dated February 23, 2011
- Filter movement and defects photographs provided by the City from 2012 and 2013 on July 16, 2015
- Various correspondence between Fru-Con and City regarding CIM 1000 repairs
- Pre-bid contractor questions and answers
- Contract specifications
- AASHTO Guide Specifications for Design and Construction of Segmental Concrete Bridges, 1999/2003 Interim
- SIRs reviewed by RRJ

SIR 33	Unauthorized Work Performed	June 30, 2011
SIR 38	Rust Stains on Concrete	August 8, 2011
SIR 40	Improper Form Removal	September 22, 2011
SIR 41	Unauthorized Work Performed	October 5, 2011
SIR 42	Non-Conforming Work Performed	October 11, 2011
SIR 44	Non-Conforming Work Performed	November 14, 2011
SIR 45	Improper Curing of Cylinders	November 21, 2011
SIR 47	Water Leakage at Filters	November 29, 2011
SIR 49	Contraction Joint Excessive Movement	December 2, 2011
SIR 54	Water Leakage at Filters	December 14, 2011
SIR 60	Concrete Defects	February 7, 2012
SIR 62	Influent Trough Cracks	March 1, 2012
SIR 63	Contraction Joint Concerns	March 2, 2012
SIR 64	Water Leakage at Filters	March 16, 2012
SIR 66	Improper Curing Techniques	April 9, 2012
SIR 74	Improper Curing Techniques	July 15, 2012
SIR 75	Improper Curing Techniques	July 25, 2012
SIR 76	Non-Conforming Repair Work Performed	August 1, 2012
SIR 77	Non-Conforming Work Performed	August 7. 2012
SIR 80	Non-Conforming Work Performed	September 20, 2012
SIR 90	Anchor Bolts Placed through CIM Repair	November 7, 2012
SIR 102 (Revised)	Inadequate Concrete Cover	March 15, 2013
SIR 106	Non-Conforming Work Performed	April 3, 2013
SIR 114	Water Leakage through Electrical Conduit	May 9, 2013
SIR 116	Non-Conforming Work Performed	May 21, 2013
SIR 124	Water Leakage at Filters	August 2, 2013
SIR 146	Improper Grouting Procedure	December 13, 2013
SIR 148	Cracking of Roof Sloped Toping	January 2, 2014
SIR 164	Lack of Productivity in Applying CIM Repairs	March 21, 2014
SIR 168	Leakage in the Mudwells	April 17, 2014
SIR 173	Unauthorized Repair Performed	June 20, 2014
SIR 174	Inadequate Repair	June 24, 2014
SIR 175	Inadequate Repair	June 24, 2014
SIR 177	Inadequate Repair	July 1, 2014
SIR 179	Inadequate Repair	July 9, 2014
SIR 183	Inadequate Repair	July 22, 2014

APPENDIX B

RRJ Modeling Approach

RRJ Modeling Approach

Base Slab and Sump Pit

The analysis model of the base slab, created using 3D solid elements, extends between two construction joints in the project east/west direction and between the outer edges of two piles in the north/south direction, with the full slab thickness accounted for. A joint comprised of a keyway was positioned along the east/west plane and centered between the two extreme north/south boundaries of the base slab model. The keyway was modeled with an approximately 4 1/2-inch male key projection on one side of the joint and a 4 1/2-inch female key depression on the adjacent side. The male key projection was slightly undersized to allow a small gap to be modeled between the male and female contact edges and compression only (gap) elements with relatively large stiffness properties that were modeled at this interface to allow load transfer and simulate contact. Both male and female sections of the keyway were modeled with a 3/8 inch gap in the center of the key to account for the presence of the waterstop. The waterstop was modeled using compression only (gap) elements with the approximate compressive stiffness as provided in the product literature for the SIKA Greenstreak waterstop used on the project. Piles are modeled as approximately 24-inch-by-24-inch-by-6-foot-deep concrete solid elements, fixed at the base, with properties defined to simulate the in-place steel piles. The effects of the soil were not considered in this analysis. The slab portion containing the female keyway and the base slab was provided with the full material properties of the as-designed concrete, corresponding to a compressive strength of 4,500 psi. The slab portion with the male keyway was modelED using 75 percent of the design strength to account for the approximate material characteristics that would be expected at the time the heat generated by hydration had dissipated. The model was subjected to a series of loads, all of which relate to shrinkage due to the heat of hydration. Temperature loads, simulating the effects of shrinkage, were applied to the slab portion containing the male keyway only, including temperature differentials of -5 degrees to -30 degrees at 5-degree intervals.

Y-wall

The analysis model of the Y-wall, created using 3D solid elements, was developed to investigate the stress induced in the Y-wall keyway due to the maximum hydrostatic load that would be applied during the lifetime of the facility. To depict this condition, two Y-walls are modeled to the height of the top of

the weir wall (approximately 16 feet 2 inches) and all additional material above this point is disregarded. The wall extends to this particular height to simulate the maximum head of water that would occur during water leakage testing of a single bay at the DNF structure. The walls are modeled at full-length in the project north/south direction (approximately 100 feet) with keyway joints located at the quarter points. The full thickness base slab is modeled (excluding any keyway joints) and extends the full length of the model in the project north/south direction and to the midpoint of the sump adjacent to each of the Y-walls in the east and west directions. All Y-walls are modeled at 22 inches thick. All three vertical keyway joints along the length of the Y-walls are modeled with the keyways terminating at a height of approximately 12 feet 6 inches. A 3/8 inch gap is modeled in the center of each key, and the waterstop is modeled as a solid element within these gaps. The male key projection was slightly undersized to allow a small gap to be modeled between the male and female contact edges. Compression only (gap) elements, with relatively large stiffness properties, were modeled at this interface to allow load transfer and simulate contact. The base of the base slab was fixed at the approximate locations of the slab/pile interfaces. The effects of the soil were not considered in this analysis. At the north and south ends of the model, 24-inch-thick end walls were modeled to the symmetry plane to simulate the actual Y-wall end stiffness conditions. The effect of the pumping gallery building located along the south wall of the structure is not considered. All concrete solid elements were modeled with full design material properties corresponding to a compressive strength of 4,500 psi. Hydrostatic load corresponding to water filled to the full-height of the wall was applied on the insides of each of the two Y-walls and end walls. No load was applied on the opposite ends of the Y-walls to simulate the worst case loading condition of filling a single cell while the other cells remain unfilled.

ATTACHMENT 4

Sperko Engineering
Services, Incorporated
4803 Archwood Drive, Greensboro, NC 27406, USA, www.sperkoengineering.com
Voice: 336-674-0600 FAX: 336-674-0202 e-mail: sperko@asme.org

February 17, 2016

Mr. Jeff Kracun, Project Director
Balfour Beaty Infrastructure, Inc.
Patapsco Wastewater Treatment Plant
3601 Leo Street
Baltimore, MD 21226

Subject: Weld Quality Issues

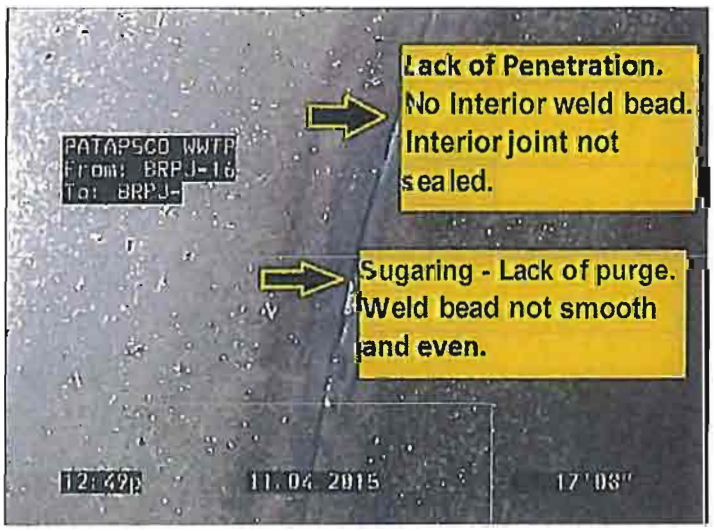
Dear Mr. Kracun,

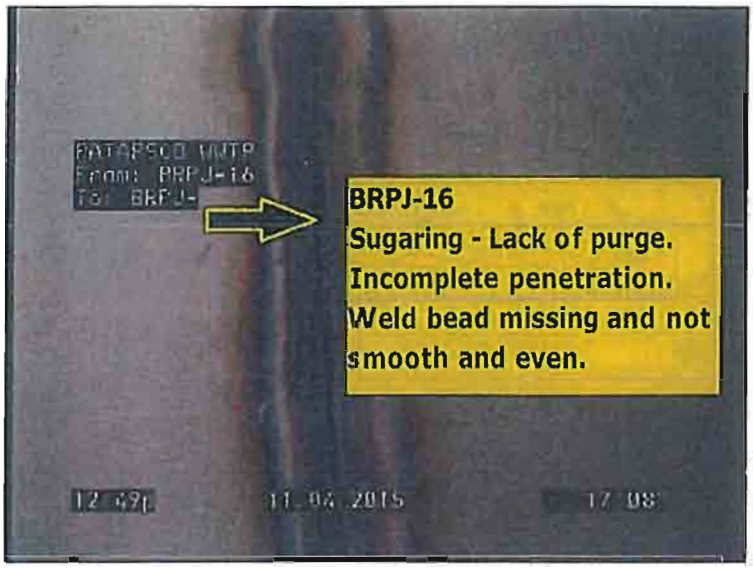
I have reviewed the February 1, 2016 letter from Mr. Art Shapiro, P.E., PMP Chief of the Office of Engineering and Construction Department of Public Works, City of Baltimore, regarding weld quality issues, and I have the following observations.

Mr. Shapiro's letter indicated that the specification SC845R Volume III of V Specification Section 40 23 36.13 for the project states that all field welds must meet the following:

- Filler wire shall be added to all welds to provide a cross section of weld metal equal to, or greater than the parent metal.
- Inert gas shielding shall be provided to the interior and the exterior of the joint.
- Interior weld beads shall be smooth, even, and not have an interior projection of more than 1/6 inch beyond the I.D. of the pipe or fitting.

I do not believe that there is any dispute about these requirements. His letter goes on to illustrate by the following photographs where he believes that the specification does not fulfill the above. Specifically, that the weld BRPJ-16 exhibits a lack of an interior weld bead and lack of penetration on over 80% of the joint.





Weld cross-section of weld metal equal to or greater than the parent metal

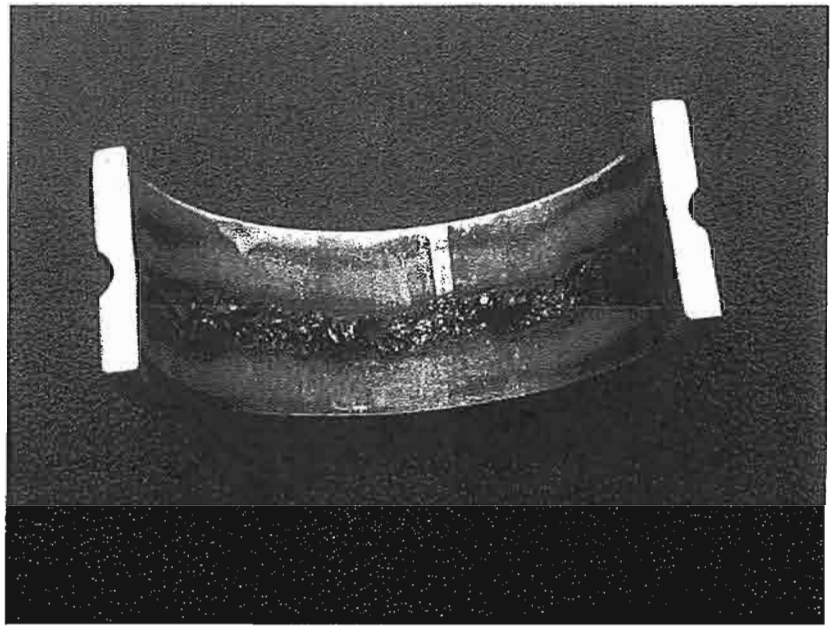
Considering the requirement that all welds shall have a cross-section of weld metal equal to or greater than the parent metal thickness, the above photographs only show the interior of the pipe surface; during my visit to the site last June, welds typically exhibited modest external reinforcement as shown in this photograph:

While the weld metal may not be flush with the *interior* surface, any incomplete fill will be compensated for by *external* reinforcement making the weld at least as thick as the parent metal thickness.

In my opinion, the presence of incomplete penetration does not violate the requirement that the weld be as thick as the parent metal since there is external reinforcement to compensate for in incomplete penetration.

Inert gas shielding shall be provided to the interior and the exterior of the joint

Regarding the requirement that inert gas shielding be provided to the interior and the exterior of the joint, the following photograph shows what a weld looks like when inert gas ("purge") is not provided on the interior surface of a stainless steel joint:



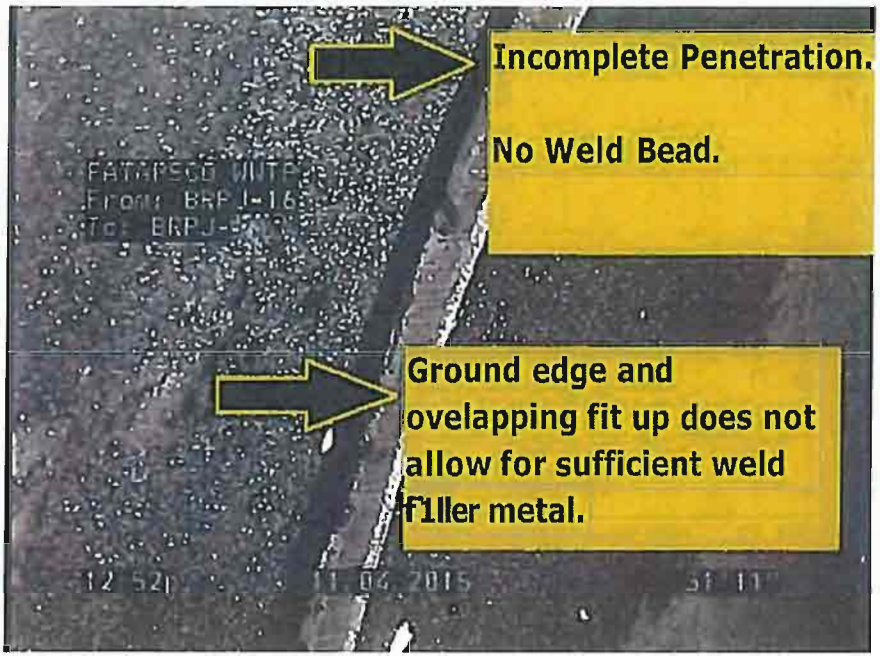
Note the coarseness of the surface as well as the discoloration. While the photos provided by Mr. Shapiro exhibited discoloration which would have resulted from making a weld where there was oxygen present during welding, that does not mean that inert gas was not provided to the root side of the joint. Those who have expertise in writing specifications for stainless steel piping where the surface oxidation and resulting discoloration has to be controlled will specify that the interior weld surface discoloration shall be permitted to have "a light straw to light blue color" or similar words that relate to the efficacy of the purge and resulting oxide thickness; others will specify a visual comparison standard such as that found in AWS D18.1; this standard contains photographs of the internal surfaces of welds made over a range of oxygen levels showing corresponding discoloration.

Unfortunately, the specification does not specify any basis for determining the efficacy of the purge gas that was used based on discoloration of the surface; just because there is discoloration does not mean that inert gas was not provided. Further, while one may actually purge pipe down to less than ½% oxygen, if a lot of moisture is present in the pipe, that moisture will cause discoloration of the surface since that moisture will be absorbed by the argon and react with the heat from welding causing discoloration. Finally, the presence of a thin film of cutting fluid or similar contaminant will cause the same kind of discoloration even if no oxygen is present at the inside surface during welding.

In my opinion, the presence of discoloration of the internal weld surfaces does not demonstrate that Balfour Beaty did not provide inert gas on the inside surfaces of the welds.

Interior weld beads shall be smooth, even, and not have an interior projection of more than 1/6 inch beyond the I.D. of the pipe or fitting.

Mr. Shapiro illustrates the third point, that the interior weld beads shall be smooth, even, and not have an interior projection of more than 1/6 inch beyond the I.D. of the pipe or fitting with this photograph:



It appears that the surface shown in this photograph has significant mismatch between the mating surfaces (i.e., is not smooth) and that there more than 1/6 inch of mismatch; in my opinion, this weld requires rework to bring it in compliance with the specification. While one may use a video camera or boroscope to locate this type of mismatch, it is my experience when welding large-diameter, thin-wall pipe that there will be locations around a circumference where the welder did not match up the ends well with the result that there will be obvious mismatch on the *external* surfaces of the pipe, and that such *eternal* mismatch will be *mirrored* with similar mismatch at the *internal* surfaces; locations showing evident external mismatch should be further examined by Balfour Beaty to determine if rework is necessary to bring the internal surfaces to within 1/6th of an inch.

Most disturbing, however, in the photographs provided by Mr. Shapiro is the repeated observation of "incomplete penetration." In the welding industry, when an engineer wants the weld metal to penetrate all the way through a joint and be visible on the opposite side of the joint, he uses the term "full penetration." A requirement for a "smooth" surface is not the same thing as "welds shall be fully penetrated." Had the specification required full penetration or had the specification incorporated ASME B31.3 in for this piping as it did in paragraph 2.15 for the stainless steel double wall piping, the welds shown in the above photographs would not be acceptable.

It should be understood, however, that if the specification required that welds be fully penetrated, the cost of welding on the project would have increased *significantly*. Further, if any type of volumetric examination or visual examination of the interior surfaces (such as was performed to obtain these photographs) had been imposed, the cost of welding would have increased several times. Some factors that cause the cost of welding to increase when the above are imposed are:

- Fewer welders are available who have the skill needed do the work
- Welders will take more time preparing ends and precleaning
- Welders will take more time to get perfect fit-up and alignment. This is especially true when dealing with large-diameter, thin-wall pipe.
- Welders will take more time to make tack welds and prepare them for incorporation into the root pass.
- Welders will take more time make root pass.
- Welders will take more time to get perfect layers of weld metal, including cleaning between layers and contouring previous layers of weld.
- Welders will take more time preparing the cover pass for examination.
- Additional supervision and/or inspection personnel will be needed to verify that the welders are doing the job so that the examinations pass.
- The only way to get welds that are capable of passing internal visual or volumetric examinations is to examine the weld, identify any unacceptable indications, make the necessary repairs and reexamine the repair areas.

In the opinion of Sperko Engineering, imposing a requirement on this work that welds exhibit full penetration is, in fact, a material change to the contract.

Suitability for Service

The open question is whether or not the conditions observed are suitable for service. Stainless steel *in water-wetted service* suffers from a phenomenon known as crevice corrosion, and the incomplete penetration shown in the above photos has the potential for initiating pitting attack in wetted service. Similarly, surfaces discolored with oxides or other surface contamination like those shown in the above photographs will suffer from underdeposit corrosion. Since the internal surfaces of the air-supply system is not water-wetted service, neither crevice corrosion nor underdeposit corrosion will be a problem. I would also note that there are split-sleeve type couplings in the system (see photo below), and such fittings have significant crevices where they meet the pipe outside surfaces; if these fittings are acceptable for the service, crevices associated with incomplete penetration should perform equally as well.

Split-sleeve type coupling

Incomplete penetration and surface oxidation and other surface contamination are, unfortunately, potential problems in water-wetted service as they can lead to pitting attack and leakage. I do not know enough about the actual service conditions, water chemistry, flow rates, etc. to speculate whether or not welds exhibiting incomplete penetration, surface oxidation or other contamination will be a problem. It is my understanding that the water will be highly aerated, and that is usually a positive condition since aeration provides plenty of oxygen to maintain the stability of the oxide layer that gives stainless steel its corrosion resistance.

Conclusions

It is the opinion of Sperko Engineering that, with the exception of where pipe joints are mismatched resulting in internal misalignment in excess of 1/6 inch (which should be evident from OD mismatch), the welds made by Balfour Beaty Infrastructure, Inc. on the subject project are in compliance with the specification requirements.

Please advise if further discussion is required.

Very truly yours,

2-17-16

Walter J. Sperko, P.E.

ATTACHMENT 5

Fru-Con
Balfour Beatty

June 30, 2016

Fru-Con Construction
A Division of Balfour Beatty Infrastructure, Inc.

3601 Leo Street
Baltimore, MD 21226

Tel 410-355-2451
Fax 410-355-2454

www.bbiius.com

Mr. Art Shapiro, PE, PMP
Chief Engineer
Office of Engineering and Construction
Room, 900, Abel Wolman Building
Baltimore, MD 21202

Attention: *Bob Nash*

FC-BC-244

Reference: Sanitary Contract 845R

Subject: Field Weld Proposal

Dear Mr. Nash:

Balfour Beatty Infrastructure, Inc./Fru-Con ("BBII/FC") is submiiting the attached proposal regarding the disputed field weld issue on the 852 and 845 project. This proposal is an attempt by BBII/FC to move forward the completion of both the 852 and 845 projects, which are being delayed by the City's actions. BBII/FC maintains that the field welds meet the specifications for both projects and admits no fault of any kind regarding the field welds on either project. BBII/FC also reserves all its rights under the contract for compensation. Please contact us should you have any questions.

Sincerely,

Jeff Kraoun
Project Director
BBII/Fru-Con Construction

CC: Joe Paplauskas (OEC); Bob Nash (OEC); Don Lambrow (OEC); Jerry Henger (RKK); Joe Tack (RKK); Ben Johns (BBII), Ashu Vyas (BBII)

Balfour Beatty Infrastructure/Frucon

Patapsco 852 AND 845 Project

Potential Solution - Stainless Steel Pipe Weld Issue

Introduction

Balfour Beatty Infrastructure/FRUCON (BBII) and the City of Baltimore have been engaged in a dispute over the quality of the field weldments performed on various stainless steel pipes incorporated into both the 852 project and the 845 project. In short, the City of Baltimore believes that the weldments in question are of questionable quality for their intended purpose. BBII believes that it performed the weldments in accordance with specification requirements and industry standard and -if the quality is not sufficient for the intended purpose, it is because no recognized welding standard was -specified. The purpose of this paper is not -to further this dispute or to argue either sides position. The purpose of this paper is to propose a solution that could resolve this issue such that work can advance and cost and schedule impacts can be minimized.

Understanding of the Primary Concern

After significant discussion between the City and BBII, both parties generally agree that this issue is not a safety issue or a structural issue. Instead, the City has a concern that is centered around longevity of the pipe welds in question. More specifically, should an issue arise either in the air handling pipe or the water handling pipe the issue would most like manifest itself in the form of a leak. Whatever the case may be, the City's concern is that repairs to any of the questioned pipe welds will be extremely difficult, and potentially expensive, to repair because it could require a complete plant shutdown. BBII does not accept the City's concern as being reasonable or even one of BBII's making. But, by identifying the City's concern clearly, we can move forward with a solution.

The field welds may be generally divided into two groups field welds performed on air handling pipe and field welds performed on water handling pipe. In all cases, the welds are circumferential and splice two pieces of pipe together. With the air handling pipe, the City's concern is related to welds closest to the blowers and the subsequent vibration transmitted to those welds from the blower. With the water handling pipe, the concern is centered around "crevice corrosion." Crevice corrosion is corrosion that could develop in or around crevices in a pipe surface, such as those found around weldments or other pipe connections. It should be noted that nobody involved with this issue knows with certainty if one or both of these issues will decrease the useful life of the weldments in question. The solution proposed herein is, therefore, is a "belt and suspenders" solution to ensure that these potential longevity issues are no longer issues.

Magnitude of the Issue

The City prepared the following field weld inventories for stainless steel pipe at each plant. BBII has reviewed these inventories and generally agrees with them.

Patapsco 852 - Stainless Steel Pipe Field Weld Inventory

Item	Location	No. of Welds	Pipe Dia	Comments
1	Pipe Gallery	4	12"	12" pipe coming off of 24" backwash filters 1,2,3,13
2	Pipe Gallery	2	24"	Dirty Backwash 2 welds by filter 23
3	Mudwell	4	8"	3 welds in the connection between air blowers 1B and 1A. 1 weld on 2A. See drawing M-12.
4	Daft No. 2 Quad D	4	14"	influent
5	Daft No. 2 Quad D	8	16"	effluent
6	Daft No. 2 Quad D	7	10"	Effluent drains. 2 welds east, 5 welds west of the tank
7	Daft No. 1 Quad D	6	12"	Drain
8	Daft No. 1 Quad D	9	14"	Effluent
9	Daft No. 1 Quad D	4	10"	Drain
10	Daft effluent	13	16"	Daft effluent, see marked up M-20 for elevation view
11	Clearwell No.1 drain pump	2	6"	The welds are on both sides on an elbow
12	Clearwell No.2 drain pump	7	6"	All 7 welds are surrounding an elbow. See M-28
13	Blower room	10	10"	2 welds per blower. One on each of the vertical pipes.
14	24" clean backwash. see M-10	12	24"	4 welds in 3 locations each
15	Filter drain	4	12"	See M-10. 2 welds around each off the elbows in Quad B.
	Total Field welds known to date =	96		

Patapsco 845 - Stainless Steel Pipe Field Weld Inventory

Item	Location	No. of Welds	Pipe Dia.	Comments
1	Mudwell Pump Room	14	16"	See figure on the right for sepcific locations
2	Blower #1	4	12"	See figure on the right for sepcific locations
3	Blower #2	3	12"	See figure on the right
4	Blower #3	2	12"	see figure on the right
5	Blower #4	2	12"	see figure on the right
6	Blower #5	4	12"	see figure on the right
7	Sludge tank 1	3	6"	There's an elbow between 2 welds for access
8	Sludge tank2	5	6"	
9	Sludge room	4		Two pipes in the middle off the room running up
10	Sludge room corner	3	6"	Need scaffolding for access
11	DAFT tank 1	3	18"	Need scaffolding for access
12	DAFT tank 1	1	24"	
13	DAFT tank 2	1	18"	
14	Process air pipe in Pipe Gallery	4	8"	between line 1&2, 5&6, 8&9, 10&11
15	2" x 4" double containment pipe	60	2"x4"	both sides of the pipe gallery 30 on each side
16	End of the pipe gallery	5	12"	Above the exit sign

Total Field welds known to date = 118

In total, between the 852 and the 845 projects there are approximately 214 field welded pipe connections on stainless steel pipe that will be addressed by this solution.

Solution Objective

Because BBII will seek to recover the time and cost associated with the solution to this problem and the City will deny responsibility based upon its position, the common ground -for both parties must be a least time and least cost impact solution that satisfies the City's concern with longevity. Of note, and of concern to both parties, is a solution that requires the removal and replacement of all the welds. Both parties generally agree that this solution would delay project completion for at least 9 months with costs in the $3 to $5 million range. Not an attractive prospect for either party.

Proposed Solution

1. 845 and 852 Air Handling Pipe

On the 845 Project, Items 2,3,4,5,6, 14 (partial) and 16 (+- 23 welds) outlined in the table above and Items 3 and 13 (14 welds) on the 852 project are all air handling pipes. Because these pipes do not handle water, crevice corrosion is not an issue. However, the City has voiced concern that because the bulk of these welds are located close to the blowers, vibration may cause weld failure.

The bulk, if not all, of the air handling pipe weldments in question have been removed by the City for testing. The testing, which is destructive, effectively makes the pipe unusable and hence, It must be replaced. BBII is taking the steps necessary to replace the pipe now. **We propose to replace these pipe elements with sections that have been fabricated in a qualified shop**. This will eliminate all field welds of concern.

2. 845 Mudwell Pump Room

Item 1 on the 845 weld list above (14 welds) has been removed and will be refabricated to accommodate the adjusted mudwell pump room layout. **We propose to replace this pipe element with a pipe section that has been fabricated in a qualified shop.** This will eliminate all field welds of concern.

3. 852 DAFT Pipe

Items 4,5, 6,7,8,9, and 10 outline 38 welds for 852 DAFT pipe. BBII records indicate that each of these welds were inspected by OEC at the time the weldments were installed. These welds have been installed to the satisfaction of the City. **Proposed solution – no further action necessary.**

4. 845 sludge & DAFT Pipe

Items 7,8,9,10, 11,12, and 13(20 welds) outlined in the table above address sludge pipe and daft pipe in 845. All of these weldments were performed by Chesapeake Mechanical as opposed to BBII forces. The

City has not identified any concerns with these field welds. **Proposed solution – no further action necessary** .

5. 845 2"x4" Double Containment pipe

Item 15 in the table above addresses the Double containment pipe (60 welds). Of note, these weldments are "socket welds" and are not similar to any of the other weldments in question. Also, we understand that OEC's welding expert (Mr. Kidwell) was on site and inspected these welds during construction. Therefore, the welds meet the City's quality expectations. **Proposed solution – no further action necessary.**

6. All other field Welds

All field welds except items 1,2,3,10,11,12,14, and 15 (35 welds) in the 852 table above have been addressed in the narrative above. **Proposed solution for "all other field welds – Install Dependa Lock pipe couplers at each of the weldment splice locations noted.** BBII proposes to leave the weld in question in place and simply install a Dependa Lock coupling over the welded splice. Given that a Dependa Lock coupling is fully capable of splicing these pipes on their own, with a weldment in place, this solution is a "belts and suspenders" solution to the City's concern about these welds.

Conclusion

BBII proposes to execute the solutions outlined herein. We believe this solution resolves the longevity concerns raised by the City for the least time and cost impact. Of note, solutions 1 and 2 are in process and solution 6 will be the most difficult of all the solutions to implement. However, please note that once solutions 1 and 2 are complete, solution 6 can be implemented anytime after solutions 1 and 2 are complete meaning that it can be done without impacting plant I&C work and startup efforts.

BBII respectfully requests the City's approval of this proposal.

MINUTES

PROPOSALS AND SPECIFICATIONS

1. Department of Transportation – TR 17007, Structural Repairs on Bridges Citywide JOC 2
BIDS TO BE RECV'D: 07/26/2017
BIDS TO BE OPENED: 07/26/2017

2. Department of Transportation – TR 17009, Cement Concrete Slabs Repairs Citywide III
BIDS TO BE RECV'D: 06/14/2017
BIDS TO BE OPENED: 06/14/2017

3. Department of Transportation – TR 17020, Utility Locating Test Holes & Boring for Engineering Projects Citywide
BIDS TO BE RECV'D: 06/14/2017
BIDS TO BE OPENED: 06/14/2017

4. Department of Public Works – SC 910, Improvements to the Sanitary Sewer Collection System in the Herring Run Sewershed Part 2: Chinquapin Run
BIDS TO BE RECV'D: 06/28/2017
BIDS TO BE OPENED: 06/28/2017

There being no objections, the Board, UPON MOTION duly made and seconded, approved the above-listed Proposals and Specifications to be advertised for receipt and the opening of bids on the date indicated.

MINUTES

A PROTEST WAS RECEIVED FROM MS. KIM TRUEHEART FOR ALL ITEMS ON THE AGENDA.

The Board of Estimates received and reviewed Ms. Trueheart's protest. As Ms. Trueheart does not have a specific interest that is different from that of the general public, the Board will not hear her protest.

Kim A. Trueheart

May 16, 2017

Board of Estimates
Attn: Clerk
City Hall, Room 204
100 N. Holliday Street,
Baltimore, Maryland 21202

Dear Ms. Taylor:

Herein is my written protest on behalf of the underserved and disparately treated citizens of the Baltimore City who appear to be victims of questionable management and administration within the various boards, commissions, agencies and departments of the Baltimore City municipal government.

The following details are provided to initiate this action as required by the Board of Estimates:

1. Whom you represent: Self
2. What the issues are:

Pages 1 - 132, City Council President and members of the Board of Estimates, BOE Agenda dated May 17, 2017, if acted upon:

a. The proceedings of this board often renew business agreements without benefit of clear measures of effectiveness to validate the board's decision to continue funding the provider of the city service being procured;
b. The Baltimore City School Board of Commissioners routinely requires submissions for board consideration to include details of the provider's success in meeting the objectives and/or desired outcomes delineated in the previously awarded agreement;
c. The members of this board continue to fail to provide good stewardship of taxpayers' funds as noted by the lack of concrete justification to substantiate approval of actions presented in each weekly agenda;
d. This board should immediately adjust the board's policy to ensure submissions to the board include measures of effectiveness in each instance where taxpayer funds have already been expended for city services;

Email: kimtrueheart@gmail.com
5519 Belleville Ave
Baltimore, MD 21207

e. In the interest of promoting greater transparency with the public this board should willing begin to include in the weekly agenda more details which it discusses in closed sessions without benefit of public participation.
f. Lastly this board should explain to the public how, without violating the open meeting act, a consent agenda is published outlining the protocols for each week's meeting prior to the board opening its public meeting.

3. How the protestant will be harmed by the proposed Board of Estimates' action: As a citizen I have witnessed what appears to be a significant dearth in responsible and accountable leadership, management and cogent decision making within the various agencies and departments of the Baltimore City municipal government which potentially cost myself and my fellow citizens excessive amounts of money in cost over-runs and wasteful spending.

4. Remedy I desire: The Board of Estimates should immediately direct each agency to include measures of effectiveness in any future submissions for the board's consideration.

I look forward to the opportunity to address this matter in person at your upcoming meeting of the Board of Estimates on May 17, 2017.

If you have any questions regarding this request, please telephone me at (410) 205-5114.

Sincerely,
Kim Trueheart,
Voter, Citizen & Resident

5519 Belleville Ave
Baltimore, MD 21207

President: "Okay thank you. There being no more business before the Board, the Board will recess until bid opening at 12 noon. Thank you."

* * * * * *

MINUTES

Clerk: "Good afternoon. The Board of Estimates is now in session for the receiving and opening of bids."

BIDS, PROPOSALS, AND CONTRACT AWARDS

Prior to the reading of bids received today and the opening of bids scheduled for today, the Clerk announced that the following agency had issued an Addenda extending the dates for receipt and opening of bids on the following contracts. There were no objections.

Department of Public Works/Office of Engineering and Construction -	SC 966, Cleaning and Inspection of Sanitary Sewers at Various Locations in Baltimore City - Zone A **BIDS TO BE RECV'D: 05/31/2017** **BIDS TO BE OPENED: 05/31/2017**
Department of Public Works/Office of Engineering and Construction -	SC 970, Cleaning and Inspection of Sanitary Sewers at Various Locations in Baltimore City - Zone A **BIDS TO BE RECV'D: 06/07/2017** **BIDS TO BE OPENED: 06/07/2017**

Thereafter, UPON MOTION duly made and seconded, the Board received, opened, and referred the following bids to the respective departments for tabulation and report:

Bureau of Purchases - B50004537, Diversity and Labor Compliance System (Price Opening)

Ask Reply, Inc. d/b/a B2Gnow
Early Morning Software, Inc.

Bureau of Purchases - B50004963, Unarmed Uniformed Security Guard Services

Abacus Corporation
Red Coats, Inc. dba Admiral Security Services
Watkins Security Agency, Inc.
Allied Universal Security Services
Metropolitan Protective Services, Inc.

Bureau of Purchases - B50005001, On-Site Preventative Maintenance & Inspection for Heavy Duty Fleet Vehicles

Fleetpro, Inc.
K. NEAL International Trucks, Inc.
Dovell and Williams
Columbia Fleet Service, Inc.
Johnson & Towers, Inc.
Johnson Truck Center, LLC

MINUTES

Department of Public Works - SC 953, Sanitary Sewer Collection System Improvements in the High Level Sewershed

AM-Liner East Inc.
Insituform Technologies, LLC
Spiniello Companies
SAK Construction, LLC
Metra Industries

* * * * * *

There being no objections, the Board, UPON MOTION duly made and seconded, adjourned until its next scheduled meeting on Wednesday, May 31, 2017.

JOAN M. PRATT
Secretary