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May 13, 2016

Mr. Rick Smith, Jr., Township Manager  
East Goshen Township  
1580 Paoli Pike  
West Chester, PA 19380-6199

Dear Mr. Smith,

**Subject: Dam Related Engineering Services for East Goshen Township  
Hershey Mill Dam (DEP ID No. D15-125)  
Construction Cost Review**

East Goshen Township (Township) is currently in the process of evaluating alternatives for either modifying or breaching Hershey Mill Dam (DEP ID No. D15-125). Preliminary cost estimates for three options were provided to the Township in an April 6, 2016 letter from Edward B. Walsh & Associates. As requested by the Township, Gannett Fleming reviewed information provided for each option and is providing an opinion on the construction costs and feasibility of the three options. The three options being considered are described below.

**Option 1 – New Auxiliary Spillway.** Includes adding a 58-foot-wide auxiliary spillway adjacent to the existing 22-foot-wide principal spillway and raising the top of dam by as much as 1.5-feet in some areas to elevation 450.5 in order to convey the 100-year flood without overtopping the embankment. The crest of the new auxiliary spillway will be four inches higher than the crest of the principal spillway. The Township has secured a permit from the Pennsylvania Department of Environmental Protection (DEP), Division of Dam Safety for this option. The permit was issued on July 7, 2014. The construction cost prepared by Edward. B. Walsh & Associates for this option is \$302,025.

**Option 2 – Lower Principal Spillway.** Option 2 involves lowering the crest of the principal spillway 6 feet and removing upstream sediment deposits as needed by excavating pilot channels through the reservoir to direct flows towards the spillway. The construction cost prepared by Edward. B. Walsh & Associates for this option is \$96,456.

**Option 3 – Decommission Dam.** Option 3 involves breaching the embankment down to the natural streambed and re-establishing the stream channel through the sediment deposits in the reservoir. The construction cost prepared by Edward. B. Walsh & Associates for this option is \$97,674.

Gannett Fleming, Inc.

**DOCUMENTS PROVIDED FOR REVIEW:**

The opinions provided within this letter were developed based information presented in the following documents:

- Letter from Edward B. Walsh & Associates, Inc., dated April 6, 2016 containing a breakdown of the estimated construction costs for Options 1, 2 and 3.
- Construction drawings (six sheets) entitled “Restoration Plan for Hershey’s Mill Dam” as prepared by Edward B. Walsh & Associates, last revised June 11, 2014.
- Dam Permit issued by DEP, Division of Dam Safety on July 15, 2014.
- East Goshen Township Memo by Rick Smith dated March 17, 2016.

Only Option 1 has been advanced to the point where permits have been obtained. No drawings, concept sketches, or construction quantities for Options 2 and 3 have been provided.

**GANNETT FLEMING OPINIONS**

*Option 1 – New Auxiliary Spillway.* In the absence of supporting calculations for the new auxiliary spillway shown on the drawings prepared by Edward B. Walsh & Associates, there appear to be certain components of the design that may require additional investigation. Based on our cursory review of the information provided, the following provides our opinion on the estimated construction cost and areas where additional detail may be needed.

- Risk of Flood Damage During Construction: The construction cost estimate includes \$17,550 for water control during construction of which \$12,350 consists of pumping the stream(s) around the work area or over the existing spillway for a period of up to 1 month. The proposed pumping system would need to be operated continuously for at least a month. The specified cost appears to be very low for this critical work item. In addition, diversion and care of water for dam projects carries substantial risk, and this risk is normally transferred to the Contractor, since the contractor controls the site and the means and measures to divert the flow through the work area. The risk associated with providing diversion and care of water during construction does not appear to be reflected in the current construction cost estimate. It is likely that during the construction period, a heavy rainfall will occur that will exceed the capacity of the proposed pumping system and flood the construction site. In addition to damaging work in progress, there is the potential to damage the adjacent dam features and/or cause sediment deposits within the reservoir to be flushed downstream. Any changed conditions encountered during construction, or bad weather, could also delay the project and extend the time needed to pump the flow around the work area.

- Dewatering the Site: Construction of the proposed auxiliary spillway involves placement of a concrete slab on a suitable foundation. In order for this to take place, the foundation excavation must be fully dewatered and dry. This is typically accomplished through the use of sump pits and/or groundwater dewatering wells. Foundation dewatering does not appear to be reflected in the current cost estimate.
- Unknown Foundation Conditions: No subsurface or foundation information for the new Auxiliary spillway is provided on the drawings. It is unclear if subsurface investigations have been performed to sample foundation materials, locate bedrock and classify the soils located within/under the proposed auxiliary spillway. Therefore the foundation conditions for the auxiliary spillway appear to be unknown. Understanding the foundation conditions for the auxiliary spillway is important. If the spillway is founded on erodible overburden material, which appears to be the case, the auxiliary spillway design should include a seepage analysis and would likely require a seepage cutoff wall and filtered drain system to control seepage under the structure and prevent a piping failure. If the auxiliary spillway structure is founded on bedrock, foundation treatment would include additional excavation and effort to clean and inspect the foundation rock, and place backfill concrete to the desired foundation grade.
- Seepage, Collection and Filter System: The drawings indicate the addition of a short filter diaphragm at the left end of the proposed spillway to collect seepage which may occur around the left end of the spillway. No seepage collection and filtering system is shown for seepage under the spillway. It is recommended that this feature be considered in the design, especially if the auxiliary spillway is founded on erodible material.
- Fill Materials, Placement, Compaction and Testing: The drawings indicate that material removed from the embankment to construct the spillway expansion will be stockpiled and reused to backfill the spillway. While this appears to be a reasonable approach, no information is provided to confirm if this material is suitable as “impervious” backfill. Pending soil test results, offsite “impervious” material may need to be imported to the site at an additional cost. No information on fill placement, compaction and testing requirements could be found within the information provided.
- Sheet Pile Wall Details: The design shows placement of a steel sheet pile wall running upstream-downstream through the embankment along the left side of the principal spillway to support the excavation for the new auxiliary spillway. It is assumed that the sheet pile wall will remain in place at the completion of the project. The placement of this sheet pile wall will create a potential seepage path through the embankment. Seepage treatment details for the sheet pile wall are not shown on the drawings.
- Stone Facade Details: The downstream face of the proposed spillway contains a vertical concrete wall that is to be treated with a stone facade to match the appearance of the existing spillway. Information such as the thickness of the stone facade, how the facade will be anchored to the vertical concrete wall, etc. are not clearly evident from the information provided. Such details may impact the cost of the facade and may also

necessitate modifications to the spillway cross section (i.e., additional detail needed for the concrete foundation that supports the facade and the length that the spillway crest slab overhangs the facade).

- Concrete Details: The proposed spillway is to be comprised of a concrete foundation slab, a vertical concrete wall at the downstream face of the spillway, a concrete slab for energy dissipation downstream of the spillway and a concrete slab to form the crest of the spillway. Given the length and width of the proposed concrete features, construction and expansion joints with waterstops will be required to control cracking of the concrete and seepage through the structure.
- Potential for Changed Conditions: Rehabilitation of existing dams often includes working with limited information, especially when as-built records and subsurface information are not available for the structure. During excavation for the proposed modifications, unanticipated features and conditions can be encountered that can substantially impact the intended design or require additional modifications to the dam. The Township should include a contingency in their budget for this option to address the potential for changed conditions. Contingencies in the range of 20 to 30 percent are appropriate for the unknowns associated with Option 1.

Based on the above, the current estimate of \$302,025 appears low for Option 1.

***Option 2 – Lower Principal Spillway.*** Without a detailed design, construction quantities, or a detailed description of what is included in Option 2, we are unable to determine if the construction cost estimate of \$97,000 is reasonable. However, we offer the following opinions related to unit costs, many of which are applicable to Options 1, 2 and 3:

- Mobilization and Demobilization: These costs are typically assumed to be approximately seven (7) percent of the construction cost. The mobilization costs provided in the estimates are in the vicinity of one (1) percent.
- Excavation Costs: Excavation costs for common earth normally range between \$5 and \$20 per cubic yard depending on the volume of material, type of equipment used, and haul distance for spoiling the material. Excavation costs provided in the estimate assume a unit cost of \$5 per cubic yard. We would also anticipate an additional cost to spoil, compact, grade and stabilize the material once it is at its final destination. Onsite spoiling costs may be in the range of \$5 to \$10 per cubic yard of material.
- Erosion and Sediment Control Costs: The erosion and sediment control costs appear to be reasonable for the scale of the project.
- Potential for Changed Conditions: As discussed under Option 1, rehabilitation of existing dams often includes working with limited information, especially when as-built records and subsurface information are not available for the structure. During excavation for the proposed modifications, unanticipated features and conditions can be encountered

that can substantially impact the intended design or require additional modifications to the dam. The Township should include a contingency in their budget for this option to address the potential for changed conditions. Contingencies in the range of 30 percent are appropriate for conceptual designs. The cost estimate provided within the Edward B. Walsh & Associates letter dated April 6, 2016 contains a contingency of approximately 14 percent. Given the above, we would recommend increasing the contingency.

Assuming the items/quantities listed in the Option 2 cost estimate are reasonable and comprehensive of the project, the construction cost estimate of \$97,000 appears low based on the observations listed above.

**Option 3 – Decommission Dam.** Similar to Option 2, without a detailed design, construction quantities, or a detailed description of what is included in Option 3, we are unable to determine if the construction cost estimate of \$97,000 is reasonable. However, the comments offered with respect to Option 2 also apply to Option 3. In our opinion, the main uncertainty and risk associated with Option 3 is the control of water and the management of the reservoir sediment. The construction cost estimate has allocated \$11,760 for the control of offsite runoff through the work area. Depending on the methods used and the length of time for which these facilities must be maintained, these costs may be low. The volume of sediment to be removed and the location where the sediment will be spoiled will significantly influence the construction costs. It is our understanding that sediment sampling performed by URS in 2008 found the reservoir sediments to be “clean”; therefore, the reservoir sediments can be spoiled onsite. Assuming the items/quantities listed in the Option 3 cost estimate are reasonable and comprehensive of the project, the construction cost estimate of \$97,000 appears low based on the observations listed above.

An option that does not appear to have been considered is to lower the entire dam to the point where it is no longer a regulated structure and retains the reservoir sediment. This approach may be less expensive than decommissioning the dam if removal of substantial sediment deposits is required.

In summary, it is our opinion that the construction cost estimates for Options 1, 2 and 3 are on the low side. The cost for Option 3, however, may be diminished by obtaining outside funding through a grant or if the project is used to mitigate environmental impacts for another project.

*Gannett Fleming*  
Mr. Rick Smith  
East Goshen Township

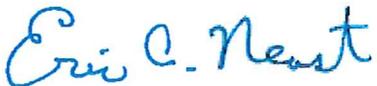
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May 13, 2016

If you have any questions or need additional information, please do not hesitate to call me or Paul Schweiger at 717-763-7212, extensions 2828 and 2504, respectively.

Sincerely,

GANNETT FLEMING, INC.  
Environmental Resources Division



ERIC C. NEAST, P.E.  
Project Manager  
Dams and Hydraulics Section



EDWARD B. WALSH & ASSOCIATES, INC.  
*Complete Civil Engineering Design / Consultation Services*  
Lionville Professional Center  
125 Dowlin Forge Road  
Exton, PA 19341

April 6, 2016

Option One - Dam Improvement per DEP approved plan:

Risbon Excavating provided a quote for construction of the concrete spillway and berm improvements. The quoted amount was \$ 204,521.00 (see attached for line item / cost breakdown). Following the bid there were additional plan revisions required by DEP. The construction costs associated with plan revisions following construction bid provided by Risbon Excavating are the following:

1. Install sheet piling to contain dam embankment beyond spillway construction area = \$ 40,900.00
2. Install underdrain system beyond walls = \$ 7,200.00
3. Existing wall extension to new top of berm height = \$3,800.00
4. Construction stakeout = \$ 4,700.00 (this line item was excluded from Risbon price)
5. Quote adjustment factor for inflation = \$ 40,904.00

These items are added to the quote of \$ 204,521.00

Total cost = \$ 302,025.00

OptionTwo - Lower the spillway six feet and partial removal of impounded sediment:

Individual unit quantities and costs are as follows:

1. Same line items as 1, 3, and 4 from Risbon bid (subtotal = \$ 28,500.00)
2. E & S controls
  - Rock Construction entrance \$3,500.00
  - 600 LF of Filter Sock \$ 3,780.00
  - Stabilize disturbed area \$ 1,200.00
3. Excavation of soil behind spillway down to new spillway elevation = 510 CY @ \$5/CY = \$2,550.00 (assumes material to be set in lake area )
4. Stream elevation adjustment in bottom of lake to meet new spillway elevation = \$ 4,150.00
5. Spillway construction
  - Existing spillway demolition \$6,200.00
  - Construct new spillway (same width as existing but six feet lower) = \$30,430.00
6. Rip rap scour protection = \$4,180.00
7. Contingency amount = \$11,966.00

Total = \$96,456.00

Option Three - Remove the spillway and removal of impounded sediment:

Individual unit quantities and costs are as follows:

1. Mobilization = \$800.00
2. Water control / bypass pumping = \$11,760.00

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3. E & S controls

- Rock Construction entrance \$3,500.00
- 800 LF of Filter Sock \$ 5,040.00
- Stabilize disturbed area \$ 10,220.00

4. Excavation of soil behind spillway = 6,700 CY @ \$5/CY = \$33,500.00 (assumes material to be set in lake area )

5. Stream reconstruction = \$ 16,850.00

6. Spillway demolition and removal of material = \$3,850.00

7. Contingency amount = \$12,154.00

Total = \$97,674.00

PAGE-2-  
FRIENDS OF HERSHEY MILL DAM  
RESTORATION- EXC. BID

4) Water Control Cont.-	
c) dig new stream path to straighten and allow for lowering of pond-	\$2,700.00
5) Spillway-	
a) build berm around work area to protect from pond w/fill from pond bottom-	\$1,350.00
b) demo/remove and stockpile existing stone wall @ new spillway area-	\$ 500.00
c) dig for new spillway-	\$2,933.00
1) stockpile to use as backfill	
d) dig footers-	\$1,480.00
e) pour new spillway as per plans-	\$91,300.00
f) backfill walls of spillway w/compaction using material removed during dig of new spillway-	\$6,800.00
g) install rip-rap scour protection in front of new spillway-	\$4,180.00
h) re-grade berm to reach new elevation and width-	\$2,200.00
6) Lower pond bottom elevation to achieve a 6' ft deep pond; push spoils to sides and middle to create an island in middle of pond-	\$34,960.00
7) Misc.-	
a) grout under existing spillway lip to stop undermining-	\$2,500.00

**TOTAL PROPOSAL- \$204,521.00**

RISBON EXCAVATING, LLC  
71 RISBON ROAD  
HONEY BROOK, PA 19344  
PH(610)286-5173/FAX(610)286-5141  
email- [risbonexc71@aol.com](mailto:risbonexc71@aol.com)

FRIENDS OF HERSHEY'S MILL DAM  
1034 HERSHEY MILL RD.  
WEST CHESTER, PA 19380  
PH(610)296-4210/CELL(610)804-1122  
email- [nbde@verizon.net](mailto:nbde@verizon.net)

Att: Neil DeRiemer

Re: DAM RESTORATION/NEW SPILLWAY  
EXC. BID

Bid to Include:

1) Mobilization-	\$ 800.00
2) E & S-	
a) install 600lf of 18" silt sox-	\$3,780.00
b) install 50lf of 18" silt fence-	\$ 88.00
c) erosion control mat-	
1) 10,000sf on re-graded dam breast-	\$6,100.00
2) 15,000sf on sides of pond after lowering pond bottom elevation and placing spoils on sides of pond-	\$9,150.00
d) install/remove rock construction entrance off Greenhill Rd. to work area at new spillway-	\$3,500.00
e) install/remove temporary access/construction entrance off Hershey Mill Rd.-	\$2,500.00
3) Clearing-	
a) remove trees/stumps from dam breast and along Hershey Mill Rd. to allow for spoils to be placed; haul stumps off site-	\$12,850.00
4) Water Control-	
a) build cofferdam upstream of existing spillway to allow for pumping stream-	\$2,500.00
b) pump stream(s) around work area to or over existing spillway for a period of up to 1 month (4) weeks-	\$12,350.00

# Memo

## East Goshen Township

Date: March 17, 2016  
To: Board of Supervisors  
From: Rick Smith, Township Manager  
Re: Hershey Mill Dam

The attached worksheet outlines the cost to:

- Improve Spillway so that the dam will pass the design storm,
- A Partial Breach (lowering the existing concrete spillway by six feet) as suggested by PADEP,
- A Full Breach

Under the Improve Spillway option, we would be responsible for all of the typical costs associated with operating and maintain a dam.

If we went with the Partial Breach and Full Breach options we would still incur some expense to maintain the lowered dam or the open space.

# Hershey Mill Dam 30 Year Life Costs

3/18/2016

Option	Design/Permit	Bidding	Construction	Inspection	Contingency	Total	Yearly	30 Year Cost
				5% of Construction	10% of Construction		Inspection and/or Maintenance	
<b>Improve Spillway</b>	\$37,160	\$3,300	\$302,025	\$15,101	\$30,203	\$387,789	\$4,000	\$458,054
<b>Partial Breach</b>	\$11,100	\$3,300	\$96,456	\$4,823	\$10,756	\$126,434	\$2,000	\$266,965
<b>Full Breach</b>	\$11,100	\$3,300	\$97,674	\$4,884	\$10,877	\$127,835	\$2,000	\$268,366

**Comments**

Design/Permit

See 2/3/12 proposal for Improve Spillway cost. This work has been completed and we have a permit

See 12/29/15 proposal for Partial Breach cost

Based on 3/16/16 conversation with Adam ok to use Partial Breach estimate for Full Breach

Bidding

See 8/27/14 proposal for bidding costs

Construction

See 3/16/16 cost estimate

Inspection

Based on 3/16/16 conversation with Adam use 5% of construction cost

Contingency

Based on 3/16/16 conversation with Adam use 10% of Construction Cost since we have the plans and permit for the Improve Spillway Option

Based on 3/17/16 conversation with Adam use 10% of Design/Permit and Construction Cost since we do not have the plans and permit for the Partial Breach or Full Breach Options.

Yearly Costs

Assume Annual Inspection @ \$2,000 & Routine Maintenance @ \$2,000 for Improve Spillway Option

Assume Routine Maintenance @ \$2,000 for Partial Breach and FullBreach Options

### 30-Year Cost Analysis of Three Options for HM Dam

Long-term inflation                    2%  
 Discount rate                            1%

Year	Improve Spillway	Partial Breach	Full Breach
0	387,789	126,434	127,835
1	2,020	4,040	4,040
2	2,040	4,080	4,080
3	2,061	4,121	4,121
4	2,081	4,162	4,162
5	2,102	4,204	4,204
6	2,123	4,246	4,246
7	2,144	4,289	4,289
8	2,166	4,331	4,331
9	2,187	4,375	4,375
10	2,209	4,418	4,418
11	2,231	4,463	4,463
12	2,254	4,507	4,507
13	2,276	4,552	4,552
14	2,299	4,598	4,598
15	2,322	4,644	4,644
16	2,345	4,690	4,690
17	2,369	4,737	4,737
18	2,392	4,785	4,785
19	2,416	4,832	4,832
20	2,440	4,881	4,881
21	2,465	4,930	4,930
22	2,489	4,979	4,979
23	2,514	5,029	5,029
24	2,539	5,079	5,079
25	2,565	5,130	5,130
26	2,591	5,181	5,181
27	2,616	5,233	5,233
28	2,643	5,285	5,285
29	2,669	5,338	5,338
30	2,696	5,391	5,391
<b>30-year cost</b>	<b>458,054</b>	<b>266,965</b>	<b>268,366</b>



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March 16, 2016

Mr. Rick Smith, Township Manager  
East Goshen Township

**RE: Hershey's Mill Dam, East Goshen Township, Chester County**

Dear Mr. Smith:

Pursuant to your request I have completed a cost analysis for multiple options for modifications to the Hershey Mill Dam to satisfy the requirements previously established by DEP with respect to the Dam. The following options were considered in the cost analysis:

1. Improve the current dam and spillway per the DEP approved plans to construct a new spillway. Included in this cost is excavation to increase the ponding depth available. The excavated material would stay in the lake area to create an upland area.

**Estimated Cost = \$302,025.00**

2. Lower the existing spillway (six feet) to ensure the 100 year storm event can be contained to the spillway area. The cost includes the excavation needed to remove the fill behind the existing spillway down to the elevation for the new spillway. The cost also includes the construction of a new spillway in the location of the existing one as it is anticipated that the existing spillway foundation is not sufficient for loading that would occur with a new concrete spillway system.

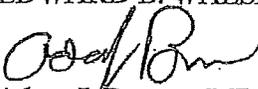
**Estimated Cost = \$96,456.00**

3. Remove the spillway completely and establish the stream upslope from the spillway area. This option includes sufficient excavation of the fill material to provide a stream with a level area adjacent to the stream and 3:1 slopes beyond the level area to get to existing grade.

**Estimated Cost = \$97,674.00**

Should you require any additional information or have any questions, please do not hesitate to contact me.

Very truly yours,  
EDWARD B. WALSH & ASSOC., INC.

  
Adam J. Brower, P.E.

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PARTIAL BREACH  
AND  
FULL BREACH



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December 29, 2015

Board Of Supervisors  
East Goshen Township  
1580 Paoli Pike  
West Chester, Pa. 19380

**RE: Hershey Mill Dam Spillway Design and Permitting  
East Goshen Township, Chester County, PA**

Dear Board Members:

In accordance with your request of 12/23/2015, EBWA has prepared a proposal for the Civil Engineering services necessary to provide a modified system that will meet DEP regulations. The proposal includes the necessary engineering to prepare a plan set that includes the necessary details for construction. In addition the proposal includes the required preparation of the DEP applications for the review of the dam and spillway design and permitting for the dam to remain with a spillway at a reduced elevation.

Edward B. Walsh and Associates, Inc. (EBWA) proposes the following:

**I. Pond Spillway Design:**

1. Perform modeling to determine spillway sizing and embankment improvements needed to meet DEP regulations for a reduced classification.
2. Prepare construction improvement plan set including the following:
  - Proposed grading and improvement plan including sediment removal and regrading
  - Erosion control to be implemented for construction
  - Construction staging
  - Spillway and embankment details
  - Rock energy dissipater design and specification
  - Construction and erosion control details

Total I.....\$9,800.00

Note this includes a redesign of the spillway at the location of the existing spillway to reduce construction costs.

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**II. DEP Dam Permit:**

1. Prepare application package including the following:
  - Dam Permit
  - General Information Form
  - Operation and Maintenance Program
  - PNDI Search
2. Meet with client and DEP staff (budget 4 hours)

Total II.....\$1,300.00

**Grand Total I & II (Preliminary/Final Plans).....\$11,100.00**

Please note that the above does include normal revisions to the plan as requested by DEP. This proposal does *not* however, include major revisions to the plan as requested by the Client, DEP and/or the Township beyond the Permit requirements. In addition this proposal does not include construction inspection or retaining wall designs for the proposed berm height modification.

This proposal is valid for a period of 90 days from the date of this proposal, after which EBWA reserves the right to update. Any other work not included within the scope of this project will be subject to your prior approval and will be billed on a time and material basis at the following hourly rates:

Principal	=	\$150.00/Hour
Landscape Architect	=	\$125.00/Hour
Project Mgr./Sr. Eng. & Surveyor	=	\$130.00/Hour
Project Mgr./Engineer	=	\$100.00/Hour
Prof. Land Surveyors	=	\$ 95.00/Hour
Chief of Survey	=	\$ 95.00/Hour
Environmental Scientist	=	\$ 90.00/Hour
Designer I	=	\$ 95.00/Hour
Draftsperson/CADD	=	\$ 95.00/Hour
Draftsperson	=	\$ 85.00/Hour
Inspector	=	\$ 78.00/Hour
Survey Crew (2-Man Crew)	=	\$135.00/Hour

\*\* The above-referenced rates are subject to annual adjustments in January of each year.

Payment terms are net thirty (30) days. Invoices are sent monthly on work performed each month. If this proposal meets with your approval, please sign, date and forward one (1) copy to my attention. We can schedule the work upon your authorization to proceed.

December 29, 2015  
East Goshen Township  
Dam Spillway Design / Permitting Proposal  
Page 3 of 3

I would like to take this opportunity to thank you for giving EBWA the opportunity to provide you with this proposal and I look forward to the prospect of working with you on this project.

Very truly yours,  
EDWARD B. WALSH & ASSOC., INC.



Adam J. Brower, P.E.  
Project Engineer

**PROPOSAL ACCEPTANCE:**

\_\_\_\_\_  
**Authorized Signature**

\_\_\_\_\_  
**Date**



EDWARD B. WALSH & ASSOCIATES, INC.  
*Complete Civil Engineering Design / Consultation Services*  
Lionville Professional Center  
125 Dowlin Forge Road  
Exton, PA 19341

August 27, 2014

Board Of Supervisors  
East Goshen Township  
1580 Paoli Pike  
West Chester, Pa. 19380

**RE: Hershey Mill Dam Spillway Contract Document Preparation and Bid Review Process  
East Goshen Township, Chester County, PA**

Dear Board Members:

In accordance with your request, EBWA has prepared a proposal for Civil Engineering services necessary to prepare contract documents for the Hershey Mill Dam improvement construction bidding and bid review process. The documentation will be prepared with the PennBID program and the process for bid reviews and question answering will be conducted via the PennBID program.

Edward B. Walsh and Associates, Inc. (EBWA) proposes the following:

**I. Contract Documents / Bid Letting:**

1. Preparation of contract documents and technical specifications including but not limited to:
  - a. Advertisement for bids.
  - b. Bid Form.
  - c. Agreement / Bond Forms.
  - d. PA Steel Products Procurement Act.
  - e. General Conditions / Technical Specifications.
  - f. Prevailing Wage Rate Determination.

Subtotal 1.....\$1,350.00

*REGISTERED PROFESSIONAL ENGINEERS & LAND SURVEYORS  
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2. Coordinate the Bid Letting Process:

- a. Post Construction Drawings and Contract Documents to PennBID system for public bid process.
- b. Provide Bid Advertisement to Daily Local (advertisement to be paid for by the Township.)
- c. Attend Pre-bid meeting.
- d. Review and respond to Contractor Questions via the PennBID system.
- e. Coordinate the bid opening.
- f. Review of bids and check references.
- g. Provide letter of recommendation to Township for bid award.

Subtotal 2.....\$1,950.00

**Grand Total .....\$3,300.00**

The following items are excluded from the scope of work:

Major revisions (changes to the scope of work) to the plans as requested by the Township, Conservation District or DEP, additional Geotechnical studies or structural engineering design, PNDI follow up resolution / renewal, construction stakeout / as-built survey, permit / application fees, construction inspection / oversight, public meeting attendance (except as noted), delivery charges and prints / reproductions.

This proposal is valid for a period of 90 days from the date of this proposal, after which EBWA reserves the right to update. Any other work not included within the scope of this project will be subject to your prior approval and will be billed on a time and material basis at the following hourly rates:

Principal	=	\$150.00/Hour
Landscape Architect	=	\$125.00/Hour
Project Mgr./Sr. Eng. & Surveyor	=	\$135.00/Hour
Project Mgr./Engineer	=	\$100.00/Hour
Prof. Land Surveyors	=	\$ 95.00/Hour
Chief of Survey	=	\$ 95.00/Hour
Environmental Scientist	=	\$ 90.00/Hour
Designer I	=	\$ 95.00/Hour
Draftsperson/CADD	=	\$ 95.00/Hour
Draftsperson	=	\$ 85.00/Hour

August 27, 2014  
East Goshen Township  
Dam Spillway Contract Document / Bid Letting  
Page 3 of 3

Inspector	=	\$ 78.00/Hour
Survey Crew (2-Man Crew)	=	\$135.00/Hour

\*\* The above-referenced rates are subject to annual adjustments in January of each year.

Payment terms are net thirty (30) days. Invoices are sent monthly on work performed each month. If this proposal meets with your approval, please sign, date and forward one (1) copy to my attention. We can schedule the work upon your authorization to proceed.

I would like to take this opportunity to thank you for giving EBWA the opportunity to provide you with this proposal and I look forward to the prospect of working with you on this project.

Very truly yours,  
EDWARD B. WALSH & ASSOC., INC.



Adam J. Brower, P.E.  
Project Engineer

**PROPOSAL ACCEPTANCE:**

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Date

IMPROVE SPILLWAY



EDWARD B. WALSH & ASSOCIATES, INC.  
Complete Civil Engineering Design / Consultation Services  
Lionville Professional Center  
125 Dowlin Forge Road  
Exton, PA 19341

February 3, 2012

Board Of Supervisors  
East Goshen Township  
1580 Paoli Pike  
West Chester, Pa. 19380

**RE: Hershey Mill Dam Spillway Design and Permitting  
East Goshen Township, Chester County, PA**

Dear Board Members:

In accordance with your request, EBWA has prepared a proposal for Civil Engineering and Professional Land Surveying services necessary to evaluate the existing dam and spillway and to provide a modified system that will meet DEP regulations. The proposal includes the necessary engineering to prepare a plan set that includes the necessary details for construction. In addition the proposal includes the required preparation of the DEP applications for the review of the dam and spillway design and permitting for the dam to remain.

Edward B. Walsh and Associates, Inc. (EBWA) proposes the following:

**I. Site Survey and Base Plan Preparation:**

1. Site Survey of Existing Features:
  - a. Survey to be performed of existing features and topography in area proposed for improvements.
  - b. Survey cross-sections of pond area including the embankment and area downslope of the embankment.
2. Finalize Base Plan in CAD File of parcel showing additional features surveyed.

Total I.....\$2,910.00

**II. Pond Spillway Design:**

1. Determine flow rate to dam.

REGISTERED PROFESSIONAL ENGINEERS & LAND SURVEYORS  
Pennsylvania, New Jersey, Delaware, Maryland & North Carolina  
610-903-0060 FAX 610-903-0080  
www.ebwalshinc.com  
Established 1985

2. Perform modeling to determine spillway sizing and embankment improvements needed to meet DEP regulations.
3. Perform geotechnical analysis of existing embankment at spillway.
4. Prepare construction improvement plan set including the following:
  - Existing features plan
  - Proposed grading and improvement plan
  - Erosion control to be implemented for construction
  - Construction staging
  - Spillway and embankment details
  - Rock energy dissipater design and specification
  - Construction and erosion control details

Total II.....\$23,125.00

**III. DEP Dam Permit:**

1. Prepare application package including the following:
  - Environmental Assessment
  - Risk Assessment
  - Dam Permit
  - General Information Form
  - Operation and Maintenance Program
  - PNDI Search
  - NPDES Permitting

2. Meet with client and DEP staff (budget 16 hours)

Total III.....\$11,125.00

**Grand Total I, II, III & IV (Preliminary/Final Plans).....\$37,160.00**

Please note that the above does include normal revisions to the plan and hydrological analysis as requested by DEP. This proposal does *not* however, include major revisions to the plan as requested by the Client, DEP and/or the Township beyond the Permit requirements. In addition this proposal does not include construction inspection or retaining wall designs for the proposed berm height modification.

This proposal is valid for a period of 90 days from the date of this proposal, after which EBWA reserves the right to update. Any other work not included within the scope of this project will be

subject to your prior approval and will be billed on a time and material basis at the following hourly rates:

Principal	=	\$150.00/Hour
Landscape Architect	=	\$125.00/Hour
Project Mgr./Sr. Eng. & Surveyor	=	\$130.00/Hour
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Very truly yours,  
EDWARD B. WALSH & ASSOC., INC.



Adam J. Brower, P.E.  
Project Engineer

**PROPOSAL ACCEPTANCE:**

\_\_\_\_\_  
**Authorized Signature**

\_\_\_\_\_  
**Date**