

Memo

TO: Kendra Gwin, PE – City of Portage

FROM: Brian L. McKissen, PE, CFM

DATE: February 17, 2020

RE: Alternatives Analysis – DRAFT
Hampton Creek Wetland Areas
City of Portage, Kalamazoo County, Michigan

PROJECT NO.: 181663

Introduction

The Hampton Creek Bog is experiencing prolonged high water levels that are impacting private properties and residential structures. This memo serves as an alternatives analysis for multiple options to provide a permanent solution to mitigating the high water levels. Each of these alternatives consists of a stormwater drainage system that outlets to the wetlands adjacent to Portage Creek in the Gourdneck State Game Area and includes a schematic plan, conceptual Engineer's opinion of probable project cost, and pros and cons of each alternative.

Alternatives Analysis

Option 1

Option 1, as shown in Figure 1 consists of a new restricted storm sewer outlet from the Hampton Creek Bog to the Greenspire Bog. An overflow ditch will serve as an outlet from the Greenspire Bog and will route through a retention basin, which will mitigate water quality and flooding concerns for Portage Creek and the adjacent Portage Creek Wetlands. The retention basin will have an overflow to the Portage Creek Wetlands, which will ensure the outlet from the Greenspire Bog will provide a positive flow under all conditions. The conceptual Engineer's opinion of probable project cost is shown in Appendix 1 and the summary is shown in Table 1.

Table 1 – Option 1 Summary

Estimate	Pros	Cons
Construction: \$516,000 Project: \$960,000	• Discharges from higher quality wetland to lower quality wetland • Large wetland buffer from overflow to Portage Creek for water quality/flood protection • Large available area for infiltration system to mitigate water quality and flooding of Portage Creek • Good access to proposed outlet • Provides overflow outlet from Greenspire Bog to manage high water levels	• Requires excavation of parking lot and Moorsebridge Road • Property owners concerned about passing flow through Greenspire Bog • Not most cost-effective option

Option 2

Option 2 utilizes the existing storm sewer connection between the Hampton Creek Bog and the private retention basin at the northwest corner West Centre Avenue and Moorsbridge Road. A restricted outlet would be installed in the retention basin and would discharge into the Greenspire Bog. The outlet from the Greenspire Bog would be identical to Option 1.

Option 2a

A topographic survey of the storm sewer that connects the Hampton Creek Bog and retention basin shows there is a high point in the storm sewer that is approximately 1-inch greater than the high water elevation of the Hampton Creek Bog that was previously established. The high point in the storm sewer is at an elevation of 872.52 feet and the high water elevation is 872.44 feet NAVD88. Option 2a assumes the invert would be the controlling outlet elevation resulting in a high water elevation in the Hampton Creek Bog that is approximately 1-inch higher than the previously established high water elevation. The proposed concept is shown in Figure 2, the conceptual Engineer's opinion of probable project cost is shown in Appendix 2, and the summary is shown in Table 2.

Table 2 – Option 2a Summary

Estimate	Pros	Cons
Construction: \$425,000 Project: \$823,000	• Discharge from higher quality wetland to lower quality wetland • Large wetland buffer from overflow to Portage Creek for water quality/flood protection • Large available area for infiltration system to mitigate water quality and flooding of Portage Creek • Provides overflow outlet from Greenspire Bog to manage high water levels • Utilizes existing storm sewer to retention basin • Good access to proposed outlet • More cost-effective option	• Property owners concerned about passing flow through Greenspire Bog • Condition of the existing storm sewer is unknown • Depth of high water in Hampton Creek Bog would be 1-inch higher

Option 2b

Option 2b would match the design of Option 2a except a portion of the existing storm sewer that connects the Hampton Creek Bog and the wetland would be replaced to lower the high point of the storm sewer system so the high water elevation of the Hampton Creek Bog would be maintained at the previously established elevation of 872.44 feet. The proposed concept is shown in Figure 3, the conceptual Engineer's opinion of probable project cost is shown in Appendix 3, and the summary is shown in Table 3.

Table 3 – Option 2b Summary

Estimate	Pros	Cons
Construction: \$472,000 Project: \$894,000	• Discharge from higher quality wetland to lower quality wetland • Large wetland buffer from overflow to Portage Creek for water quality/flood protection • Large available area for infiltration system to mitigate water quality and flooding of Portage Creek • Provides overflow outlet from Greenspire Bog to manage high water levels • Utilizes existing storm sewer to retention basin • Good access to proposed outlet • More cost-effective option	• Property owners concerned about passing flow through Greenspire Bog • Condition of the existing storm sewer is unknown

Option 3

Option 3 provides a restricted outlet from the Hampton Creek Bog into an enclosed storm sewer that routes around the Greenspire Bog along the existing access road in the Gourdneck State Game Area into a retention basin, which will mitigate water quality and flooding concerns with Portage Creek and the adjacent Portage Creek Wetlands. The retention basin will have an overflow to the Portage Creek Wetlands. The proposed concept is shown in Figure 4, the conceptual Engineer's opinion of probable project cost is shown in Appendix 4, and the summary is shown in Table 4.

Table 4 – Option 3 Summary

Estimate	Pros	Cons
Construction: \$961,000 Project: \$1,628,000	• Discharge from higher quality wetland to lower quality wetland • Large wetland buffer from overflow to Portage Creek for water quality/flood protection • Large available area for infiltration system to mitigate water quality and flooding of Portage Creek • Addresses property owner concerns about using Greenspire Bog as a pass-through • Good access to proposed outlet	• Requires excavation of parking lot and Moorsebridge Road • Deep sewer construction • Does not provide high water relief for Greenspire Bog • One of most costly options

Option 4

Similar to Option 2, the existing storm sewer connection between the Hampton Creek Bog and the retention basin will be utilized and a restricted outlet will be placed in the retention basin. The restricted outlet will discharge into an enclosed storm sewer that will route along the Gourdneck State Game Area access road and around the Greenspire Bog.

Option 4a

Similar to Option 2a, the existing storm sewer connection will be used as the controlling high water elevation at 872.52 feet. The proposed concept is shown in Figure 5, the conceptual Engineer's opinion of probable project cost is shown in Appendix 5, and the summary is shown in Table 5.

Table 5 – Option 4a Summary

Estimate	Pros	Cons
Construction: \$840,000 Project: \$1,445,000	• Discharge from higher quality wetland to lower quality wetland • Large wetland buffer from overflow to Portage Creek for water quality/flood protection • Large available area for infiltration system to mitigate water quality and flooding of Portage Creek • Addresses property owner concerns about using Greenspire Bog as a pass-through • Utilizes existing storm sewer to retention basin • Good access to proposed outlet	• Deep sewer construction • Does not provide high water relief for Greenspire Bog • Condition of the existing storm sewer is unknown • Depth of high water in Hampton Creek Bog would be 1-inch higher • One of most costly options

Option 4b

Similar to Option 2b, the existing storm sewer connection will be partially replaced to maintain the Hampton Creek Bog high water elevation at the previously established elevation of 872.44 feet. The proposed concept is shown in Figure 6, the conceptual Engineer's opinion of probable project cost is shown in Appendix 6, and the summary is shown in Table 6.

Table 6 – Option 4b Summary

Estimate	Pros	Cons
Construction: \$851,000 Project: \$1,463,000	• Discharge from higher quality wetland to lower quality wetland • Large wetland buffer from overflow to Portage Creek for water quality/flood protection • Large available area for infiltration system to mitigate water quality and flooding of Portage Creek • Addresses property owner concerns about using Greenspire Bog as a pass-through • Utilizes existing storm sewer to retention basin • Good access to proposed outlet	• Deep sewer construction • Does not provide high water relief for Greenspire Bog • Condition of the existing storm sewer is unknown • Not most cost-effective option

Option 5

Option 5 would provide a restricted outlet nearer to the west end of the Hampton Creek Bog and discharge through an enclosed storm sewer to a retention basin in the Gourdneck State Game Area. The retention basin would have an overflow into the Portage Creek Wetlands. This alternative would require a relatively large directional drill operation to protect the resources of the Gourdneck State Game Area and rise in elevation between the Hampton Creek Bog and Portage Creek Wetlands. The proposed concept is shown in Figure 7, the conceptual Engineer's opinion of probable project cost is shown in Appendix 7, and the summary is shown in Table 7.

Table 7 – Option 5 Summary

Estimate	Pros	Cons
Construction: \$581,000 Project: \$1,052,000	• Addresses property owner concerns about using Greenspire Bog as a pass-through	• Long jack and bore operation • Deep sewer excavation • Excessive storm sewer length without a manhole structure makes maintenance difficult • Outlets to high quality wetland may be more of a concern by regulators • Very small wetland buffer to Portage Creek to manage water quality/flood protection of Portage Creek • Limited space for adequate infiltration system • Limited access to proposed outlet for maintenance • Rare plant populations at outlet • One of most costly options

Attachments

By email

Copy: Sherman Potter, PE – City of Portage

Figures

PROPOSED
OUTLET

NORTH

0 125 250 FEET

City of Portage
Kalamazoo County, Michigan

Hampton Creek Wetland Area
Proposed Stormwater Outlet Option 4a



fishbeck
Engineers | Architects | Scientists | Constructors

fishbeck
Engineers | Architects | Scientists | Constructors

**PROPOSED
OUTLET**

0 125 250 FEET

PROJECT NO.
181663

FIGURE NO.
7

©Copyright 2019
All Rights Reserved

City of Portage
Kalamazoo County, Michigan

Hampton Creek Wetland Area
Proposed Stormwater Outlet Option 5

Hard copy is intended to be 11"x17" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.



Appendices

Item No.	Item Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$39,100.00	\$39,100.00
2	Preconstruction Video Documentation	1	LS	\$2,500.00	\$2,500.00
3	Maintaining Traffic	1	LS	\$5,000.00	\$5,000.00
4	Soil Erosion and Sedimentation Control	1	LS	\$8,000.00	\$8,000.00
5	Dewatering	1	LS	\$10,000.00	\$10,000.00
6	Clearing (includes tree removal)	400	SY	\$50.00	\$20,000.00
7	4' Manhole	5	EA	\$4,000.00	\$20,000.00
8	Outlet Control Structure with Piles	1	EA	\$12,000.00	\$12,000.00
9	Coffer Dam	350	SFT	\$28.00	\$9,800.00
10	12" RCP Bore and Jack	130	LF	\$350.00	\$45,500.00
11	12" RCP Open Cut	790	LF	\$80.00	\$63,200.00
12	End Section, 12"	1	EA	\$800.00	\$800.00
13	24" Culvert	26	LF	\$30.00	\$780.00
14	Utility Conflicts	1	LS	\$30,000.00	\$30,000.00
15	Remove Pavement	488	SY	\$10.00	\$4,880.00
16	Parking Lot Replacement	188	SY	\$65.00	\$12,230.00
17	Road Replacement	300	SY	\$95.00	\$28,500.00
18	Aggregate Surface Cse (Park Road)	12	CY	\$60.00	\$720.00
19	Mountable Curb	30	LF	\$20.00	\$600.00
20	Excavate Retention Basin	20,000	CY	\$3.50	\$70,000.00
21	Limestone Base for Retention Basin	500	SY	\$60.00	\$30,000.00
22	Sediment Forebay	1	LS	\$1,000.00	\$1,000.00
23	Overflow Spillway	1	LS	\$3,500.00	\$3,500.00
24	Ditch Excavation	185	LF	\$8.00	\$1,480.00
25	Seed and Mulch Blanket	556	SY	\$4.50	\$2,500.00
26	Wetland Restoration	1	LS	\$8,000.00	\$8,000.00
Estimated Conceptual Construction Cost					\$430,090.00
Estimated Conceptual Construction Contingencies (~20%)					\$86,000.00
Total Estimated Construction Cost					\$516,090.00

The Consultant makes no warranty, express or implied, that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.

Client: City of Portage
 Project: Hampton Creek Wetland Outlet - Option 2a
 By: Fishbeck

Date: 2/17/2020
 Project No.: 181663
 By: BM

Conceptual Engineer's Opinion of Probable Project Cost

Item No.	Item Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$32,200.00	\$32,200.00
2	Preconstruction Video Documentation	1	LS	\$2,500.00	\$2,500.00
3	Maintaining Traffic	1	LS	\$2,000.00	\$2,000.00
4	Storm Sewer Televising	720	LF	\$1.20	\$860.00
5	Storm Sewer Cleaning/Repair	1	LS	\$10,000.00	\$10,000.00
6	Soil Erosion and Sedimentation Control	1	LS	\$8,000.00	\$8,000.00
7	Clearing (includes tree removal)	400	SY	\$50.00	\$20,000.00
8	Outlet Control Structure	1	EA	\$4,000.00	\$4,000.00
9	12" RCP Bore and Jack	130	LF	\$350.00	\$45,500.00
10	24" Culvert	26	LF	\$30.00	\$780.00
11	End Section, 12"	1	EA	\$800.00	\$800.00
12	Aggregate Surface Cse (Park Road)	12	CY	\$60.00	\$720.00
13	Excavate Retention Basin	20,000	CY	\$3.50	\$70,000.00
14	Limestone Base for Retention Basin	500	SY	\$60.00	\$30,000.00
15	Sediment Forebay	1	LS	\$1,000.00	\$1,000.00
16	Overflow Spillway	1	LS	\$3,500.00	\$3,500.00
17	Water Quality Device	1	LS	\$10,000.00	\$10,000.00
18	Retention Basin Modifications	1	LS	\$100,000.00	\$100,000.00
19	Ditch Excavation	185	LF	\$8.00	\$1,480.00
20	Seed and Mulch Blanket	556	SY	\$4.50	\$2,500.00
21	Wetland Restoration	1	LS	\$8,000.00	\$8,000.00
Estimated Conceptual Construction Cost					\$353,840.00
Estimated Conceptual Construction Contingencies (~20%)					\$70,800.00
Total Estimated Construction Cost					\$424,640.00

In providing opinions of probable construction cost, the Client understands that the Consultant has no control over the cost or availability of labor, equipment or materials, or over market conditions or the Contractor's method of pricing.

The Consultant's opinions of probable construction costs are made on the basis of the Consultant's professional judgement and experience.

The Consultant makes no warranty, express or implied, that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.

Client: City of Portage
 Project: Hampton Creek Wetland Outlet - Option 2b
 By: Fishbeck

Date: 2/17/2020
 Project No.: 181663
 By: BM

Conceptual Engineer's Opinion of Probable Project Cost

Item No.	Item Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$35,700.00	\$35,700.00
2	Preconstruction Video Documentation	1	LS	\$2,500.00	\$2,500.00
3	Maintaining Traffic	1	LS	\$2,000.00	\$2,000.00
4	Storm Sewer Televising	720	LF	\$1.20	\$860.00
5	Storm Sewer Cleaning/Repair	1	LS	\$10,000.00	\$10,000.00
6	Soil Erosion and Sedimentation Control	1	LS	\$8,000.00	\$8,000.00
7	Clearing (includes tree removal)	400	SY	\$50.00	\$20,000.00
8	Manhole	2	EA	\$4,000.00	\$8,000.00
9	Outlet Control Structure	1	EA	\$4,000.00	\$4,000.00
10	15" RCP	158	LF	\$95.00	\$15,010.00
11	12" RCP Bore and Jack	130	LF	\$350.00	\$45,500.00
12	24" Culvert	26	LF	\$30.00	\$780.00
13	End Section, 12"	1	EA	\$800.00	\$800.00
14	Remove Pavement	170	SY	\$10.00	\$1,700.00
15	Parking Lot Replacement	170	SY	\$65.00	\$11,050.00
16	Aggregate Surface Cse (Park Road)	12	CY	\$60.00	\$720.00
17	Excavate Retention Basin	20,000	CY	\$3.50	\$70,000.00
18	Limestone Base for Retention Basin	500	SY	\$60.00	\$30,000.00
19	Sediment Forebay	1	LS	\$1,000.00	\$1,000.00
20	Overflow Spillway	1	LS	\$3,500.00	\$3,500.00
21	Water Quality Device	1	LS	\$10,000.00	\$10,000.00
22	Retention Basin Modifications	1	LS	\$100,000.00	\$100,000.00
23	Ditch Excavation	185	LF	\$8.00	\$1,480.00
24	Seed and Mulch Blanket	556	SY	\$4.50	\$2,500.00
25	Wetland Restoration	1	LS	\$8,000.00	\$8,000.00
Estimated Conceptual Construction Cost					\$393,100.00
Estimated Conceptual Construction Contingencies (~20%)					\$78,600.00
Total Estimated Construction Cost					\$471,700.00

In providing opinions of probable construction cost, the Client understands that the Consultant has no control over the cost or availability of labor, equipment or materials, or over market conditions or the Contractor's method of pricing.

The Consultant's opinions of probable construction costs are made on the basis of the Consultant's professional judgement and experience.

The Consultant makes no warranty, express or implied, that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.

Item No.	Item Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$72,819.00	\$72,820.00
2	Preconstruction Video Documentation	1	LS	\$2,500.00	\$2,500.00
3	Maintaining Traffic	1	LS	\$3,000.00	\$3,000.00
4	Soil Erosion and Sedimentation Control	1	LS	\$8,000.00	\$8,000.00
5	Dewatering	1	LS	\$10,000.00	\$10,000.00
6	Clearing (includes tree removal)	400	SY	\$50.00	\$20,000.00
7	4' Manhole	6	EA	\$4,000.00	\$24,000.00
8	4' Manhole, Deep Excavation	6	EA	\$8,000.00	\$48,000.00
9	Outlet Control Structure with piles	1	EA	\$12,000.00	\$12,000.00
10	Coffer Dam	350	SFT	\$28.00	\$9,800.00
11	12" RCP Bore and Jack	160	LF	\$350.00	\$56,000.00
12	12" RCP Open Cut	1,010	LF	\$80.00	\$80,800.00
13	12" RCP Open Cut, Deep Excavation (30'±)	1,000	LF	\$160.00	\$160,000.00
14	End Section, 12"	1	EA	\$800.00	\$800.00
15	Utility Conflicts	1	LS	\$45,000.00	\$45,000.00
16	Remove Pavement	581	SY	\$10.00	\$5,810.00
17	Parking Lot Replacement	581	SY	\$65.00	\$37,800.00
18	Aggregate Surface Cse (Park Road)	1,470	CY	\$60.00	\$88,200.00
19	Excavate Retention Basin	20,000	CY	\$3.50	\$70,000.00
20	Limestone Base for Retention Basin	500	SY	\$60.00	\$30,000.00
21	Sediment Forebay	1	LS	\$1,000.00	\$1,000.00
22	Overflow Spillway	1	LS	\$3,500.00	\$3,500.00
23	Ditch Excavation	185	LF	\$8.00	\$1,480.00
24	Seed and Mulch Blanket	556	SY	\$4.50	\$2,500.00
25	Wetland Restoration	1	LS	\$8,000.00	\$8,000.00
Estimated Conceptual Construction Cost					\$801,010.00
Estimated Conceptual Construction Contingencies (20%)					\$160,202.00
Total Estimated Construction Cost					\$961,212.00

The Consultant makes no warranty, express or implied, that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.

Item No.	Item Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$63,594.00	\$63,590.00
2	Preconstruction Video Documentation	1	LS	\$2,500.00	\$2,500.00
3	Maintaining Traffic	1	LS	\$2,000.00	\$2,000.00
4	Storm Sewer Televising	720	LF	\$1.20	\$860.00
5	Storm Sewer Cleaning/Repair	1	LS	\$10,000.00	\$10,000.00
6	Soil Erosion and Sedimentation Control	1	LS	\$8,000.00	\$8,000.00
7	Dewatering	1	LS	\$10,000.00	\$10,000.00
8	Clearing (includes tree removal)	400	SY	\$50.00	\$20,000.00
9	4' Manhole	1	EA	\$4,000.00	\$4,000.00
10	4' Manhole, Deep Excavation (30'±)	5	EA	\$8,000.00	\$40,000.00
11	Outlet Control Structure	1	EA	\$5,000.00	\$5,000.00
12	12" RCP Bore and Jack	130	LF	\$350.00	\$45,500.00
13	12" RCP Open Cut, Deep Excavation (30'±)	1,010	LF	\$180.00	\$181,800.00
14	End Section, 12"	2	EA	\$800.00	\$1,600.00
15	Aggregate Surface Cse (Park Road)	1,470	CY	\$60.00	\$88,200.00
16	Retention Basin Modifications	1	LS	\$100,000.00	\$100,000.00
17	Excavate Retention Basin	20,000	CY	\$3.50	\$70,000.00
18	Limestone Base for Retention Basin	500	SY	\$60.00	\$30,000.00
19	Sediment Forebay	1	LS	\$1,000.00	\$1,000.00
20	Overflow Spillway	1	LS	\$3,500.00	\$3,500.00
21	Ditch Excavation	185	LF	\$8.00	\$1,480.00
22	Seed and Mulch Blanket	556	SY	\$4.50	\$2,500.00
23	Wetland Restoration	1	LS	\$8,000.00	\$8,000.00
Estimated Conceptual Construction Cost					\$699,530.00
Estimated Conceptual Construction Contingencies (20%)					\$139,906.00
Total Estimated Construction Cost					\$839,436.00

The Consultant makes no warranty, express or implied, that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.

Client: City of Portage
 Project: Hampton Creek Wetland Outlet - Option 4b
 By: Fishbeck

Date: 2/17/2020
 Project No.: 181663
 By: BM

Conceptual Engineer's Opinion of Probable Project Cost

Item No.	Item Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$64,455.00	\$64,460.00
2	Preconstruction Video Documentation	1	LS	\$2,500.00	\$2,500.00
3	Maintaining Traffic	1	LS	\$2,000.00	\$2,000.00
4	Storm Sewer Televising	720	LF	\$1.20	\$860.00
5	Storm Sewer Cleaning/Repair	1	LS	\$10,000.00	\$10,000.00
6	Soil Erosion and Sedimentation Control	1	LS	\$8,000.00	\$8,000.00
7	Dewatering	1	LS	\$10,000.00	\$10,000.00
8	Clearing (includes tree removal)	400	SY	\$50.00	\$20,000.00
9	4' Manhole	2	EA	\$4,000.00	\$8,000.00
10	4' Manhole, Deep Excavation (30'±)	5	EA	\$8,000.00	\$40,000.00
11	Outlet Control Structure	1	EA	\$5,000.00	\$5,000.00
12	15" RCP	158	LF	\$95.00	\$15,010.00
13	Coffer Dam	350	SFT	\$28.00	\$9,800.00
14	12" RCP Bore and Jack	130	LF	\$350.00	\$45,500.00
15	12" RCP Open Cut, Deep Excavation (30'±)	1,010	LF	\$160.00	\$161,600.00
16	End Section, 12"	2	EA	\$800.00	\$1,600.00
17	Aggregate Surface Cse (Park Road)	1,470	CY	\$60.00	\$88,200.00
18	Retention Basin Modifications	1	LS	\$100,000.00	\$100,000.00
19	Excavate Retention Basin	20,000	CY	\$3.50	\$70,000.00
20	Limestone Base for Retention Basin	500	SY	\$60.00	\$30,000.00
21	Sediment Forebay	1	LS	\$1,000.00	\$1,000.00
22	Overflow Spillway	1	LS	\$3,500.00	\$3,500.00
23	Ditch Excavation	185	LF	\$8.00	\$1,480.00
24	Seed and Mulch Blanket	556	SY	\$4.50	\$2,500.00
25	Wetland Restoration	1	LS	\$8,000.00	\$8,000.00
Estimated Conceptual Construction Cost					\$709,010.00
Estimated Conceptual Construction Contingencies (20%)					\$141,802.00
Total Estimated Construction Cost					\$850,812.00

In providing opinions of probable construction cost, the Client understands that the Consultant has no control over the cost or availability of labor, equipment or materials, or over market conditions or the Contractor's method of pricing.

The Consultant's opinions of probable construction costs are made on the basis of the Consultant's professional judgement and experience.

The Consultant makes no warranty, express or implied, that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.

[illegible]

The Consultant makes no warranty, express or implied, that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.