



# Public Works Service Operations Department

**DATE:** August 16, 2022

**FROM:** Jeff Heintz, Public Works Service Operations Director

**ITEM:** Approve Change Order 4 to the agreement with Northern Improvement Company for the solid waste management facility cell 1 expansion project

**REQUEST:**

Approve Change Order 4 to the agreement with Northern Improvement Company for the solid waste management facility cell 1 expansion project.

Please place this item on the August 23, 2022, City Commission meeting agenda.

**BACKGROUND INFORMATION:**

Change Order 4 is the final balancing change order for the installed quantities.

**RECOMMENDED CITY COMMISSION ACTION:**

Approve Change Order 4 to the Agreement with Northern Improvement Company for the Solid Waste Management Facility - Cell 1 Expansion Project.

**STAFF CONTACT INFORMATION:**

Jeff Heintz | Public Works Service Operations Director | 701.355.1700 | [jheintz@bismarcknd.gov](mailto:jheintz@bismarcknd.gov)


## CONTRACT CHANGE ORDER FORM

**DEPARTMENT**

City Department	<u>Public Works Service Ops</u>	Change Order Number	<u>4</u>
Contractor	<u>Northern Improvement Company</u>	Change Order Date	<u>7/1/2022</u>
Project Description	<u>SWDUTIL.WASTE.MSWCELL - LANDFILL MSW CELL CONSTRUCTION</u>		
Original Contract Amount	\$ <u>2,816,187.63</u>		
Previous Contract Amount	\$ <u>2,929,866.93</u>		
Change Order Amount	\$ <u>157,753.10</u>		
Proposed Contract Amount	\$ <u>3,087,620.03</u>		
Within Project Scope	<u>Yes</u>	Within Project Funding	<u>Yes</u>
Completion Date	<u>10/31/2022</u>	Change/Completion Date	<u>No</u>
Revised Completion Date	_____	Commission Approval Required	
Type of Change Order	<u>non-design</u>	Work Order No.	_____

**Description:**

This change order is the final balancing change order for the installed quantities.

<p><b>Project Manager Signature</b> (≤\$15,000)</p> <p><small>Send to Fiscal if ≤\$15,000, completion date is ≤5 days, no scope change or no revised budget</small></p>	<p>_____</p> <p style="text-align: center;">Date</p>
<p><b>Department Head Signature</b> (≤\$25,000)</p> <p><small>Send to Fiscal if ≤\$25,000, completion date is ≤15 days, no scope change or no revised budget</small></p>	<p> _____</p> <p style="text-align: center;">Date</p>

**ADMINISTRATION**

<p><b>City Administrator Signature</b> (≤\$50,000)</p> <p><small>Add to Agenda</small></p>	<p>_____</p> <p style="text-align: center;">Date</p>
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**COMMISSION APPROVAL**

<p>Commission Approval Date</p> <p><u>August 23, 2022</u></p>	<p>_____</p> <p style="text-align: center;">Date</p>
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**FISCAL**

<p>_____</p> <p style="text-align: center;">Date</p>	<p>_____</p> <p style="text-align: center;">Date</p>
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*If not within project scope or funding, attach revised description and/or revised project budget form for Board approval.*

# Technical Memorandum

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**To:** Jeff Heintz, Director of Service Operations  
**From:** Dennis McAlpine, HEI Project Manager  
**Subject:** City of Bismarck Solid Waste Management Facility Cell 1 Construction Pay Request #8  
**Date:** August 10, 2022  
**City of Bismarck Project:** 2021-001  
**HEI Project:** 4489-0042 Phase 004

The purpose of this memorandum is to recommend Partial Payment #8 to Northern Improvement Company (NIC) for work completed on the City of Bismarck Solid Waste Management Facility Cell 1 Construction project during the period of 12/12/2021 – 8/5/2022.

## Project Update

NIC has substantially completed all project work onsite. A certificate of substantial completion was provided to NIC on June 24, 2022. For the past month NIC has been working to resolve minor punch-list items related to the operation(s) of the leachate pumping system control panel.

This request includes payment for contract quantities identified in Change Order 4. Change Order #4 resolves the final contract amount to correspond with the documented construction quantities. A small amount of retainage (\$5000.00) will be retained with this payment as support for the ongoing work to resolve minor punch-list items.

## Payment Application Review

We have reviewed the completed quantities submitted by Northern Improvement Company.

The following is a summary of payment:

Work completed to date:	\$3,087,620.03	(100% of total project contract amount)
Less retainage:	\$ 5,000.00	(amt commensurate w/remaining punchlist)
<u>Less previous payments</u>	<u>\$2,479,532.11</u>	
Pay Request for this estimate:	<b>\$ 603,087.92</b>	

**Recommendation**

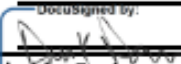
We recommend authorization of Partial Payment #8 in the amount of \$603,087.92 to Northern Improvement Company for work completed under this pay request. A detailed summary of work completed, including the partial payment certification is attached.


**Contractor's Application for Payment**

<b>Owner:</b>	<u>City of Bismarck</u>	<b>Owner's Project No.:</b>	<u>2021-001</u>
<b>Engineer:</b>	<u>Houston Engineering Inc.</u>	<b>Engineer's Project No.:</b>	<u>4489-0042</u>
<b>Contractor:</b>	<u>Northern Improvement Company</u>	<b>Contractor's Project No.:</b>	<u>21226</u>
<b>Project:</b>	<u>City of Bismarck Solid Waste Management Facility Cell 1 Construction</u>		
<b>Contract:</b>	<u>Prime</u>		
<b>Application No.:</b>	<u>8</u>	<b>Application Date:</b>	<u>8/5/2022</u>
<b>Application Period:</b>	<u>From 12/12/2021</u>	<b>to</b>	<u>8/5/2022</u>

1. Original Contract Price	\$	2,816,187.63
2. Net change by Change Orders	\$	271,432.40
3. Current Contract Price (Line 1 + Line 2)	\$	3,087,620.03
4. Total Work completed and materials stored to date (Sum of Column G Lump Sum Total and Column J Unit Price Total)	\$	3,087,620.03
5. Retainage		
a. <u>100%</u> X \$ <u>5,000.00</u> Remaining Punchlist	\$	5,000.00
b. <u>0%</u> X \$ <u>-</u> Stored Materials	\$	-
c. Total Retainage (Line 5.a + Line 5.b)	\$	5,000.00
6. Amount eligible to date (Line 4 - Line 5.c)	\$	3,082,620.03
7. Less previous payments (Line 6 from prior application)	\$	2,479,532.11
8. Amount due this application	\$	603,087.92
9. Balance to finish, including retainage (Line 3 - Line 4)	\$	-

**Contractor's Certification**  
 The undersigned Contractor certifies, to the best of its knowledge, the following:  
 (1) All previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with the Work covered by prior Applications for Payment;  
 (2) Title to all Work, materials and equipment incorporated in said Work, or otherwise listed in or covered by this Application for Payment, will pass to Owner at time of payment free and clear of all liens, security interests, and encumbrances (except such as are covered by a bond acceptable to Owner indemnifying Owner against any such liens, security interest, or encumbrances); and  
 (3) All the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

**Contractor:** Northern Improvement Company  
 Signature:  Date: 8/8/2022

<b>Recommended by Engineer</b>		<b>Approved by Owner</b>	
<b>By:</b>	<u>Dennis McAlpine</u> 	<b>By:</b>	_____
<b>Title:</b>	<u>Project Manager</u>	<b>Title:</b>	_____
<b>Date:</b>	<u>8/5/2022</u>	<b>Date:</b>	_____
<b>Approved by Funding Agency</b>		<b>Approved by Funding Agency</b>	
<b>By:</b>	_____	<b>By:</b>	_____
<b>Title:</b>	_____	<b>Title:</b>	_____
<b>Date:</b>	_____	<b>Date:</b>	_____

**Progress Estimate - Unit Price Work**

**Contractor's Application for Payment**

<b>Owner:</b>	City of Bismarck	<b>Owner's Project No.:</b>	2021-001
<b>Engineer:</b>	Houston Engineering Inc.	<b>Engineer's Project No.:</b>	4489-0042
<b>Contractor:</b>	Northern Improvement Company	<b>Contractor's Project No.:</b>	21226
<b>Project:</b>	City of Bismarck Solid Waste Management Facility Cell 1 Construction		
<b>Contract:</b>	Prime		

**Application No.:** 8      **Application Period:** From 12/12/21 to 08/05/22      **Application Date:** 08/05/22

A	B	C	D	E	F	G	H	I	J	K	L
Bid Item/ Change Order No.	Description	Contract Information				Work Completed		Materials Currently Stored (not in G) (\$)	Work Completed and Materials Stored to Date (H + I) (\$)	% of Value of Item (J / F) (%)	Balance to Finish (F - J) (\$)
		Item Quantity	Units	Unit Price (\$)	Value of Bid Item (C X E) (\$)	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) (\$)				
<b>Original Contract</b>											
1	Miscellaneous Removals	1	LS	\$3,789.00	3,789.00	1	3,789.00		3,789.00	100%	-
2	Subgrade Preparation For Gravel Surface Course	713	SY	\$1.34	955.42	713	955.42		955.42	100%	-
3	Silt Fence	500	LF	\$2.80	1,400.00	500	1,400.00		1,400.00	100%	-
4	12-inch fiber rolls	1282	LF	\$2.30	2,948.60	1282	2,948.60		2,948.60	100%	-
5	Class 13 Aggregate Surface	998	TON	\$21.30	21,257.40	998	21,257.40		21,257.40	100%	-
6	Pipe Bedding Material	1770	TON	\$18.00	31,860.00	1770	31,860.00		31,860.00	100%	-
7	6 " PVC Sanitary Sewer (SS) Pipe	48	LF	\$167.00	8,016.00	48	8,016.00		8,016.00	100%	-
8	8 " PVC Sanitary Sewer (SS) Pipe	286	LF	\$45.30	12,955.80	286	12,955.80		12,955.80	100%	-
9	RIPRAP Type M	20	TON	\$77.90	1,558.00	20	1,558.00		1,558.00	100%	-
10	24" RCP Culvert	48	LF	\$150.00	7,200.00	48	7,200.00		7,200.00	100%	-
11	12" RCP Culvert	67	LF	\$108.00	7,236.00	67	7,236.00		7,236.00	100%	-
12	6" Gate valve w/box	2	EA	\$2,163.00	4,326.00	2	4,326.00		4,326.00	100%	-
13	8" Gate valve w/box	1	EA	\$2,936.00	2,936.00	1	2,936.00		2,936.00	100%	-
14	Insulation Boards	133	SY	\$39.00	5,187.00	133	5,187.00		5,187.00	100%	-
15	Topsoiling and Topsoil Replacement over earthen stockpiles	2315	CY	\$1.50	3,472.50	2315	3,472.50		3,472.50	100%	-
16	Class IV Seeding	19004	SY	\$0.09	1,710.36	19004	1,710.36		1,710.36	100%	-
17	Mulching	19004	SY	\$0.07	1,330.28	19004	1,330.28		1,330.28	100%	-
18	Concrete MH	1	EA	\$6,489.00	6,489.00	1	6,489.00		6,489.00	100%	-
19	Mobilization and Demobilization	1	LS	\$84,330.00	84,330.00	1	84,330.00		84,330.00	100%	-
20	Groundwater/Stormwater Control & Removal	10000	MGAL	\$2.42	24,200.00	10000	24,200.00		24,200.00	100%	-
21	Watering	100	MGAL	\$11.76	1,176.00	100	1,176.00		1,176.00	100%	-
22	Test Pit Excavation	40	HR	\$272.00	10,880.00	40	10,880.00		10,880.00	100%	-
23	Common Excavation (CV) (P)	103952	CY	\$2.24	232,852.48	103952	232,852.48		232,852.48	100%	-
24	Subgrade Correction (CV)	2500	CY	\$1.10	2,750.00	2500	2,750.00		2,750.00	100%	-
25	Buffer Layer (CV) (P)	16009	CY	\$4.18	66,917.62	16009	66,917.62		66,917.62	100%	-
26	Re-Compacted Soil Barrier Layer (CV) (P)	36617	CY	\$3.08	112,780.36	36617	112,780.36		112,780.36	100%	-
27	Sand Drainage Layer (In-Place) (P)	18308	CY	\$33.39	611,304.12	18308	611,304.12		611,304.12	100%	-
28	Phase Separation and Temporary Drainage Berms (CV)	4063	CY	\$4.39	17,836.57	4063	17,836.57		17,836.57	100%	-
29	HDPE Geomembrane Liner (60 mil.)	53943	SY	\$7.78	419,676.54	53943	419,676.54		419,676.54	100%	-
30	Geocomposite Drainage Layer	25183	SY	\$11.61	292,374.63	25183	292,374.63		292,374.63	100%	-
31	Groundwater Underdrain (Perforated) Piping	1715	LF	\$26.31	45,121.65	1715	45,121.65		45,121.65	100%	-
32	Groundwater Underdrain (Solid) Piping	132	LF	\$37.30	4,923.60	132	4,923.60		4,923.60	100%	-
33	Groundwater Underdrain Discharge Piping	364	LF	\$14.80	5,387.20	364	5,387.20		5,387.20	100%	-
34	Groundwater Underdrain - Coarse Aggregate	700	TON	\$53.10	37,170.00	700	37,170.00		37,170.00	100%	-

**Progress Estimate - Unit Price Work**

**Contractor's Application for Payment**

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<b>Project:</b>	City of Bismarck Solid Waste Management Facility Cell 1 Construction		
<b>Contract:</b>	Prime		

**Application No.:** 8      **Application Period:** From 12/12/21 to 08/05/22      **Application Date:** 08/05/22

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Bid Item/ Change Order No.	Description	Contract Information				Work Completed		Materials Currently Stored (not in G) (\$)	Work Completed and Materials Stored to Date (H + I) (\$)	% of Value of Item (J / F) (%)	Balance to Finish (F - J) (\$)
		Item Quantity	Units	Unit Price (\$)	Value of Bid Item (C X E) (\$)	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) (\$)				
35	Leachate Riser Structure	1	LS	\$63,713.00	63,713.00	1	63,713.00		63,713.00	100%	-
36	Leachate Collection Trench (Perforated) Piping	923	LF	\$33.60	31,012.80	923	31,012.80		31,012.80	100%	-
37	Leachate Collection Sideslope Cleanout (Solid) Piping	1108	LF	\$27.90	30,913.20	1108	30,913.20		30,913.20	100%	-
38	Leachate Sump Riser (Perforated) Piping	30	LF	\$384.00	11,520.00	30	11,520.00		11,520.00	100%	-
39	Leachate Sump Sideslope Riser (Solid) Piping	470	LF	\$225.00	105,750.00	470	105,750.00		105,750.00	100%	-
40	Leachate Collection Trench - Drainage Aggregate	557	TON	\$44.10	24,563.70	557	24,563.70		24,563.70	100%	-
41	Leachate Collection Trench - Coarse Filter Aggregate	882	TON	\$46.50	41,013.00	882	41,013.00		41,013.00	100%	-
42	Bollards	6	EA	\$672.00	4,032.00	6	4,032.00		4,032.00	100%	-
43	Rock Ditch Check	85	CY	\$128.00	10,880.00	85	10,880.00		10,880.00	100%	-
44	Future Gas Well Drainage Enhancement	375	CY	\$9.00	3,375.00	375	3,375.00		3,375.00	100%	-
45	Wood Chip Placement (LV)	8060	CY	\$3.34	26,920.40	8060	26,920.40		26,920.40	100%	-
46	Leachate Collection/Underdrain Pumps & Ancillary Equipment	1	LS	\$154,712.00	154,712.00	1	154,712.00		154,712.00	100%	-
47	Ancillary Equipment - Wiring Devices, Panelboards, Transformers,	1	LS	\$73,388.00	73,388.00	1	73,388.00		73,388.00	100%	-
48	Electrical/Labor - Conduit & Conductors and General	1	LS	\$58,710.00	58,710.00	1	58,710.00		58,710.00	100%	-
49	Electrical - Street Lighting	1	LS	\$39,140.00	39,140.00	1	39,140.00		39,140.00	100%	-
50	Electrical - Capitol Electric Distribution	1	LS	\$27,424.00	27,424.00	1	27,424.00		27,424.00	100%	-
51	Geotextile Fabric	3898	LS	\$3.80	14,812.40	3898	14,812.40		14,812.40	100%	-

<b>Original Contract Totals</b>					<b>\$ 2,816,187.63</b>		<b>\$ 2,816,187.63</b>	<b>\$ -</b>	<b>\$ 2,816,187.63</b>	<b>100%</b>	<b>\$ -</b>
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**Progress Estimate - Unit Price Work**

**Contractor's Application for Payment**

<b>Owner:</b>	City of Bismarck	<b>Owner's Project No.:</b>	2021-001
<b>Engineer:</b>	Houston Engineering Inc.	<b>Engineer's Project No.:</b>	4489-0042
<b>Contractor:</b>	Northern Improvement Company	<b>Contractor's Project No.:</b>	21226
<b>Project:</b>	City of Bismarck Solid Waste Management Facility Cell 1 Construction		
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		Item Quantity	Units	Unit Price (\$)	Value of Bid Item (C X E) (\$)	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) (\$)				
<b>Change Orders</b>											
CO 1A	Rock Excavation	30	CY	\$20.00	600.00	30	600.00		600.00	100%	-
CO 1B	Temporary Underdrain Extension per Field Order #3	125	LF	\$31.93	3,991.25	125	3,991.25		3,991.25	100%	-
CO 2A	Underdrain 2 (Installation & GSI Re-mob)	1	LS	\$83,676.00	83,676.00	1	83,676.00		83,676.00	100%	-
CO 2B	Maintain Pumps	45	Day	\$459.00	20,655.00	45	20,655.00		20,655.00	100%	-
CO 2C	Additional Geocomposite	445	SY	\$10.69	4,757.05	445	4,757.05		4,757.05	100%	-
CO 4A	Subgrade Preparation For Gravel Surface Course	5139	SY	\$1.34	6,886.26	5139	6,886.26		6,886.26	100%	-
CO 4B	Silt Fence	-500	LF	\$2.80	(1,400.00)	-500	(1,400.00)		(1,400.00)	100%	-
CO 4C	12-inch fiber rolls	8	LF	\$2.30	18.40	8	18.40		18.40	100%	-
CO4D	Class 13 Aggregate Surface	-58.8	TON	\$21.30	(1,252.44)	-58.8	(1,252.44)		(1,252.44)	100%	-
CO 4E	Topsoiling and Topsoil Replacement over earthen stockpiles	4755	CY	\$1.50	7,132.50	4755	7,132.50		7,132.50	100%	-
CO 4F	Class IV Seeding	38716	SY	\$0.09	3,484.44	38716	3,484.44		3,484.44	100%	-
CO 4G	Groundwater/Stormwater Control & Removal	1359	MGAL	\$2.42	3,288.78	1359	3,288.78		3,288.78	100%	-
CO 4H	Watering	1593.4	MGAL	\$11.76	18,738.38	1593.4	18,738.38		18,738.38	100%	-
CO 4I	Test Pit Excavation	-33	HR	\$272.00	(8,976.00)	-33	(8,976.00)		(8,976.00)	100%	-
CO 4J	Subgrade Correction (CV)	5529	CY	\$1.10	6,081.90	5529	6,081.90		6,081.90	100%	-
CO 4K	Re-Compacted Soil Barrier Layer (CV) (P)	-652	CY	\$3.08	(2,008.16)	-652	(2,008.16)		(2,008.16)	100%	-
CO 4L	Sand Drainage Layer (In-Place) (P)	2191	CY	\$33.39	73,157.49	2191	73,157.49		73,157.49	100%	-
CO 4M	Groundwater Underdrain (Solid) Piping	6	LF	\$37.30	223.80	6	223.80		223.80	100%	-
CO 4N	Leachate Sump Sideslope Riser (Solid) Piping	7	LF	\$225.00	1,575.00	7	1,575.00		1,575.00	100%	-
CO 4O	Rock Ditch Check	-42.5	CY	\$128.00	(5,440.00)	-42.5	(5,440.00)		(5,440.00)	100%	-
CO 4P	Winterization of Temp Pumps and Sump Area	1	LS	\$15,000.00	15,000.00	1	15,000.00		15,000.00	100%	-
CO 4Q	Revised Temp Berm Grading and Additional Culvert Crossing	1	LS	\$16,065.00	16,065.00	1	16,065.00		16,065.00	100%	-
CO 4R	Revised Leachate Riser Structure Piping per FO-015	1	LS	\$836.53	836.53	1	836.53		836.53	100%	-
CO 4S	Electrical - IS Barriers	1	LS	\$1,702.95	1,702.95	1	1,702.95		1,702.95	100%	-
CO 4T	Electrical - Facility Lighting Mods	1	LS	\$7,552.53	7,552.53	1	7,552.53		7,552.53	100%	-
CO 4U	Electrical - Communications Panel Mod	1	LS	\$9,603.22	9,603.22	1	9,603.22		9,603.22	100%	-
CO 4V	Electrical - Change SS Aux Enclosures to non-SS Materials	1	LS	-\$4,301.63	(4,301.63)	1	(4,301.63)		(4,301.63)	100%	-
CO 4W	Unsuitable Materials Removal per FO-012	1	LS	\$3,360.00	3,360.00	1	3,360.00		3,360.00	100%	-
CO 4X	Cost adjustment of Seeding for larger area	1	LS	\$1,542.20	1,542.20	1	1,542.20		1,542.20	100%	-
CO 2B REV	Maintain Pumps	21	Day	\$459.00	9,639.00	21	9,639.00		9,639.00	100%	-
CO 2C REV	Additional Geocomposite	-445	SY	\$10.69	(4,757.05)	-445	(4,757.05)		(4,757.05)	100%	-



**Progress Estimate - Unit Price Work**

**Contractor's Application for Payment**

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 Engineer: Houston Engineering Inc.  
 Contractor: Northern Improvement Company  
 Project: City of Bismarck Solid Waste Management Facility Cell 1 Construction  
 Contract: Prime

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		Item Quantity	Units	Unit Price (\$)	Value of Bid Item (C X E) (\$)	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) (\$)									
<b>Change Order Totals</b>					\$	271,432.40		\$	271,432.40	\$	-	\$	271,432.40		\$	-
<b>Original Contract and Change Orders</b>																
<b>Project Totals</b>					\$	3,087,620.03		\$	3,087,620.03	\$	-	\$	3,087,620.03	100%	\$	-

## CHANGE ORDER NO.: 4 - FINAL

Owner: City of Bismarck Owner's Project No.: LF2021-001  
Engineer: Houston Engineering Inc. Engineer's Project No.: 4489-0042  
Contractor: Northern improvement Company Contractor's Project No.: 21226  
Project: City of Bismarck Solid Waste Management Facility Cell 1 Construction  
Contract Name: City of Bismarck Solid Waste Management Facility Cell 1 Construction  
Date Issued: July 1, 2022 Effective Date of Change Order: July 1, 2022

The Contract is modified as follows upon execution of this Change Order:

Description:

**The Solid Waste Management Facility-Expansion Area Cell 1 project was a unit bid price project with final payment based on the final in place quantities for the bid items. This change order is the final balancing change order for the installed quantities. Below is a summary by item identifying the final/revised in place quantities and associated contract price.**

**Change Order Item 4A (Subgrade Preparation for Gravel Surface Course): An additional 5,139 SY of area was prepared for gravel surfacing for work associated with the landfill access road/turnaround, the approach to the leachate riser structure, and portion of the south haul road. This work was completed at the contract unit price of \$1.34/SY. This work resulted in a project addition of 5,139 SY X \$1.34/SY = \$6,886.28**

**Change Order Item 4B (Silt Fence): 500 LF of silt fence was not used for construction. The removal of this quantity resulted in a project deduct of -500 LF X \$2.80/LF = (\$1,400.00)**

**Change Order Item 4C (12-inch fiber roll): An additional 8 LF of fiber roll was used to complete the project. This work resulted in a project addition of 8 LF X \$2.30/LF = \$18.40**

**Change Order Item 4D (Class 13 Aggregate Surface): 58.8 tons of aggregate materials was not used for construction. The removal of this quantity resulted in a project deduct of -58.8 tons X \$21.30/ton = (\$1,252.44)**

**Change Order Item 4E (Topsoiling and Topsoil replacement over earthen): An additional 4,755 CY of topsoil was utilized onsite. This included placement in the drainage swale area adjacent the eastern side of Cell 1 and the ditch section adjacent the access road on the west side of Cell 1. This work was completed at the contract unit price of \$1.50/CY. This work resulted in a project addition of 4,755 CY X \$1.50/CY = \$7,132.50**

**Change Order Item 4F (Class IV Seeding): An additional 38,176 SY of area was seeded to restore the additional topsoil placement area(s). This included seeding in the drainage swale area adjacent the eastern side of Cell 1 and the ditch section adjacent the access road on the west side of Cell 1. This work was completed at the contract unit price of \$0.09/SY. This work resulted in a project addition of 38,176 SY X \$0.09/SY = \$3,484.44**

**Change Order Item 4G (Groundwater/Stormwater Control & Removal): An additional 1,359 MGAL of groundwater/stormwater removals was required to complete the project. Discovery of saturated clay materials in the southern portion of the Cell near the proposed leachate sump was the primary cause of the additional removals. This work was completed at the contract unit price of \$2.42/MGAL. This work resulted in a project addition of 1,359 SY X \$2.42/MGAL = \$3,288.78**

**Change Order Item 4H (Watering):** An additional 1,593.4 MGAL of watering was required to complete this project. The additional watering was result of the unseasonably dry conditions observed during the summer months of the 2021 construction season. This work was completed at the contract unit price of \$11.76/MGAL. This work resulted in a project addition of 1,593.4 MGAL X \$11.76/MGAL = \$18,738.38

**Change Order Item 4I (Test Pit Excavation):** 33 hours of test pit excavation was not used for construction. The removal of this quantity resulted in a project deduct of -33 hours X \$272.00/hour = (\$8,976.00)

**Change Order Item 4J (Subgrade Correction):** An additional 5,529 CY of unsuitable materials were excavated and removed to provide a dry stable foundation to construct the proposed base liner system in Cell 1. The additional removals were result of accumulated sediments deposited at the Cell bottom base grades following the initial excavation of Cell 1. This work was completed at the contract unit price of \$1.10/CY. This work resulted in a project addition of 5,529 CY X \$1.10/CY = \$6,081.90

**Change Order Item 4K (Re-Compacted Soil Barrier Layer):** 652 CY of Re-Compacted Soil Barrier Layer was not used for construction. The eastern phase separation berm on the Cell floor was shifted 8-feet west reducing the amount of re-compacted soil barrier layer materials. The change to the Cell area was necessary to accommodate the limited availability of HDPE Geomembrane materials. The removal of this quantity resulted in a project deduct of -652 CY X \$3.08/CY = (\$2,008.16)

**Change Order Item 4L (Sand Drainage layer):** An additional 2,191 CY of sand drainage layer materials were placed within the Cell. The additional materials account for an added thickness of 0.14-feet over the Cell 1 area. The additional materials are attributed to error(s) in the survey tolerance of the placement equipment and minor surface undulations in the underlying re-compacted soil barrier layer. The actual quantity of additional sand drainage layer materials was confirmed via truck tickets. The additional materials were placed at the contract unit price of \$33.39/CY. This work resulted in a project addition of 2,191 CY X \$33.39/CY = \$73,157.49

**Change Order Item 4M (Groundwater Underdrain (Solid) Piping):** An additional 6-feet of piping was used to complete the project. The leachate riser structure was raised and shifted towards the adjacent landfill access road to enhance the local drainage. The minor relocation of the leachate sump riser necessitated additional piping to connect with Cell 1. The additional piping materials were placed at the contract unit price of \$37.30/LF. This work resulted in a project addition of 6 LF X \$37.30/LF = \$223.80

**Change Order Item 4N (Leachate Sump Sideslope Riser (Solid) Piping):** An additional 7-feet of piping was used to complete the project. Similar to Item 3M, the leachate riser structure was raised and shifted towards the adjacent landfill access road to enhance the local drainage. The minor relocation of the leachate sump riser necessitated additional piping to connect with Cell 1. The additional piping materials were placed at the contract unit price of \$225.00/LF. This work resulted in a project addition of 7 LF X \$225.00/LF = \$1,575.00

**Change Order Item 4O (Rock Ditch Check):** 42.5 tons of aggregate materials were not used for construction. The removal of this quantity resulted in a project deduct of -42.5 tons X \$128.00/ton = (\$5,440.00)

**Change Order Item 4P (Winterization of Temp Pumps and Sump Area):** As result of supply-chain issues with production and delivery of the dedicated control panel for the leachate pumping system, a temporary system was required to safe-guard the constructed leachate sump from freezing. This work included the installation of a temporary pump in one (1) of the leachate sump riser pipes and placement of additional wood chips (approx. 4ft) atop the sump area. The drain line from the secondary underdrain system was also buried to mitigate freezing. This additional work, not anticipated in the original contract, was completed for the lump sum price of \$15,000.

**Change Order Item 4Q (Revised Temp Berm Grading and Additional Culvert Crossing):** The temporary berm and integral ditch along the western side of the landfill perimeter road was redesigned to direct stormwater flows to the south stormwater pond. To avoid impacts to the adjacent sand stockpile a stormwater culvert was installed crossing the landfill perimeter access road. This additional work, not anticipated in the original contract, was completed for the lump sum price of \$16,065.00.

**Change Order Item 4R (Revised Leachate Riser Structure Piping Per FO-015):** The discharge piping within the leachate riser structure was modified to provide a low-point to place the magnetic flow meter. The minor piping change was made to enhance operation of the flowmeter to provide for full flow conditions for all pumping discharge(s). This additional work, not anticipated in the original contract, was completed for the lump sum price of \$836.53.

**Change Order Item 4S (Electrical – IS Barriers):** Replacement of the IS Barriers (with multi-channel functionality) were necessary for operation of the dedicated control panel. This componentry, not anticipated in the original contract, was provided for the lump sum price of \$1,702.95.

**Change Order Item 4T (Electrical – Facility Lighting Mods):** Modifications to the proposed lighting plan was made to mimic the typical installation, hardware and practices per City of Bismarck specification. This additional effort, not anticipated in the original contract, was provided for the lump sum price of \$7,552.53.

**Change Order Item 4U (Electrical – Communication Panel Mod):** Wiring and componentry within the proposed communication system to connect the dedicated leachate control panel to the landfill office was upgraded from co-axial to fiber-optic wiring. The upgrade was provided to enhance long-term operation of the system. The substituted componentry, not anticipated in the original contract, was provided for the lump sum price of \$9,603.22.

**Change Order Item 4V (Electrical – Change SS Aux Enclosures to non-SS Materials):** The ancillary electrical enclosures initially specified as stainless steel were substituted with non-metallic units. The substitution occurred as result of supply-chain issues and the associated unavailability of the stainless-steel enclosures. This substitution resulted in a lump sum project deduct of (\$4,301.63)

**Change Order Item 4W (Unsuitable Materials Removal per FO-012):** The landfill access road was redesigned to remove a ditch on the north side and manage all stormwater flows on the south side of the road. City crews completed a majority of the work. The City requested that the Contractor support the effort with removal of saturated/unsuitable soil materials from the north side the access road. The contractor completed the work, not anticipated in the original contract, for the lump sum price of \$3,360.00.

**Change Order Item 4X (Cost Adjustment of Seeding for larger Area):** The contractor requested an adjustment in pricing to cover the inflated cost of seed and straw materials. The adjustment, necessitated by the restoration of additional areas was completed for the lump sum price of \$1,542.20.

**Change Order Item 2B REV (Maintain Pumps):** Change Order #2 identified the installation and maintenance of a temporary pumping system for the primary and secondary underdrain systems. The Change Order provided budget for 45 days of operation. The temporary system was operated and maintained by the Contractor for an additional 21 days. The contractor completed the additional operations and maintenance of the primary and secondary underdrain pumps for the Change Order #2 unit price of \$459.00/day. This work resulted in a project addition of 21 days X \$459.00/day = \$9,639.00

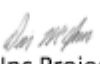
**Change Order Item 2C REV (Additional Geocomposite):** Change Order #2 identified the installation of geocomposite materials for the secondary underdrain system. During construction it was determined that the geocomposite materials were not necessary for operation of the system. The removal of this material resulted in a project deduct of -445 SYF X \$10.69/SY = (\$4,757.05)

Attachments:

**Change in Contract Times**  
 [State Contract Times as either a specific date or a number of days]

Change in Contract Price	Change in Contract Times
Original Contract Price: \$ 2,816,187.63	Original Contract Times: Substantial Completion: <u>October 30, 2021</u> Ready for final payment: <u>November 15, 2021</u>
<b>Increase</b> from previously approved Change Orders No. 1 & 2 \$ 113,679.30	<b>Increase</b> from previously approved Change Orders No.1 & 2 Substantial Completion: <u>November 15, 2021</u> Ready for final payment: <u>November 30, 2021</u>
Contract Price prior to this Change Order: \$ 2,929,866.93	Contract Times prior to this Change Order: Substantial Completion: <u>November 15, 2021</u> Ready for final payment: <u>November 30, 2021</u>
<b>Increase</b> this Change Order: \$ 157,753.10	<b>Increase</b> this Change Order: Substantial Completion: <u>July 15, 2022</u> Ready for final payment: <u>October 31, 2022</u>
Contract Price incorporating this Change Order: \$ 3,087,620.03	Contract Times with all approved Change Orders: Substantial Completion: <u>July 15, 2022</u> Ready for final payment: <u>October 31, 2022</u>

Recommended by Engineer (if required)

By: Dennis McAlpine  Digitally signed by Dennis McAlpine, DN: cn=Dennis McAlpine, o=Houston Engineering, Inc., ou=Houston Engineering, Inc., email=Dennis.McAlpine@heinc.com

Title: Houston Engineering Inc Project Manager

Date: July 1, 2022

\_\_\_\_\_  
 Authorized by Owner

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Accepted by Contractor

Derek Dame  DocuSigned by: Derek Dame, EEB78C36120B4D1

\_\_\_\_\_  
 Project manager/Estimator

July 1, 2022

\_\_\_\_\_  
 Approved by Funding Agency (if applicable)

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_