



City Council

Agenda Item

Subject: Approval of Change Order No. 1 with Dan Hart Patrol Service, LLC for the Landfill Cell No. 7 Project No. 2112, for an increase of \$440,156.56, for a new contract price of \$2,233,491.38.

Meeting: City Council - Jul 05 2022

From: Heath VonEye, Public Works Director

BACKGROUND INFORMATION:

Construction of landfill disposal Cell No. 7 including approximately 150,350 CY of excavation, 20,480 CY of recompacted soil barrier layer placement, 10,590 CY of sand drainage layer placement, installation of 1,980 LF of leachate collection piping, 1,650 LF of perimeter fence installation, 10,122 tons of gravel surfacing, installation of 1,668 LF of storm piping (various sizes), bituminous restoration (removal & replacement) of 8,700 SY of existing pavement and 21 acres of seeding/vegetative restoration.

The lowest bidder for the project was Dan Hart Patrol Services, LLC with a bid of \$1,793,334.80. This bid was lower than the Engineer Estimate by 18%. During construction of the Landfill Cell No. 7, the Contractor experienced a high quantity of inadequate soils and an underground spring. Additionally, extra quantities were needed to repair a larger area of the compost pad and provide proper drainage. Change Order No. 1 is to account for these unexpected conditions in the amount of \$440,156.56.

FINANCIAL IMPACT:

The funding for this project was budgeted in the CIP fund, accounts 605-43240-43958 and 605-43245-43817, in the amount of \$2,119,900.00.

Original Contract= \$1,793,334.82

Change Order No. 1= \$440,156.56

New Contract Amount= \$2,233,491.38

The City has been awarded a Solid Waste Management grant for \$400,000 for this project and has received a \$1,428,000 CWSRF loan and \$212,000 ARPA grant, totalling \$2.04M in funding. The additional \$193,500 required for the new contract amount is proposed come from the Landfill Unrestricted Cash Balance. Staff recommends approval of the change order.

SUGGESTED MOTION:

I move to approve Change Order No. 1 with Dan Hart Patrol Service, LLC for the Landfill Cell No. 7 Project No. 2112, for an increase of \$440,156.56, for a new contract price of \$2,233,491.38.

STAFF REFERENCE(S):

Justin Petersen, Mike Boerger, Wyatt Ewing

ATTACHMENT(S):

[WRLF Cell 7 Change Order 1 20220627](#)

CHANGE ORDER NO.: 1

Owner:	City of Watertown	Owner's Project No.:	2112
Engineer:	Houston Engineering Inc.	Engineer's Project No.:	7716-0020
Contractor:	Dan Hart Patrol Service, LLC.	Contractor's Project No.:	
Project:	WRLF Cell 7 Construction		

	Effective Date of Change Order	
Date Issued:	June 27, 2022	(pending applicable approvals): June 27, 2022

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

Description:

This change order incorporates a series of project additions and deducts to the Cell 7 Construction project as result of unforeseen conditions as follows:

- A. The proposed grades anticipated for the compost pad required significant redesign to accommodate for grade changes (additional settlement) on the south side of the pad. The additional settlement occurred after the City provided survey data was collected and utilized for design. As noted in Field Order 1 (Rev 1) additional pavement materials were removed to accommodate for the connection of proposed (revised) design grades. Field Order 1 (Rev 1) identified the placement of gravel fill materials to raise the grade on portions of the compost pad. The additional gravel fill necessitated additional bituminous paving to provide a hard non-erosive surface. This work has yet to be completed. The contractor has struggled to compact the proposed gravel materials as result of the soft/wet subbase which consists of old (pre-Subtitle D) municipal solid waste. If compaction efforts of the gravel materials are unsuccessful the Contractor will likely need to place a geotextile fabric material to "bridge" the unsuitable subgrade. Cost associated with placement of a geotextile fabric are not included in this change order. The work, if necessary, will be provided in a future change order. A detailed summary of the anticipated costs is included in the attached Change Order #1 Cost Summary Sheet. The work identified for the compost pad for Change Order #1 will be completed via contract unit pricing = **\$105,646.48**.
- B. Excavation operations associated with the development of Cell 7 uncovered a significant volume of unsuitable soil materials within the construction area. These materials and the associated wet/saturated conditions were not observed with the construction of the previous landfill Cells (1-6) at the facility. The elevation(s) of the unsuitable materials discovered in Cell 7 is consistent with the base grade elevation(s) of adjacent Cells.

The unsuitable materials, predominately consisting of organic non-compactable soils, were highly saturated upon discovery. The materials were located a few feet below existing grades and extended to depths well below the proposed sub-cut of the Cell 7 base liner system. The unsuitable materials were removed to provide a stable base to place fill materials. To provide separation from the exposed subgrade (excavated base) and allow for construction operations to proceed the base grades of Cell 7 were raised four (4) feet. This grade raise allowed for construction to proceed simultaneously with dewatering activities to "bridge" the area of unsuitable soil removal. The work was completed for a unit price of \$9.59/CY. This price exceeds the contract unit price by \$1.46 per CY (\$9.59 – \$8.13). This increased rate was necessary as result of the changed site conditions requiring materials to be excavated and trucked as opposed to removed and replaced with scrapers.

The contract specified that all materials excavated (cut) on the project would be subject to contract item #8 - Common Excavation at a rate of \$1.61/CY. In the event that unsuitable materials were encountered the materials would be removed and replaced via contract item #9 – Subgrade Correction at a rate of \$6.52/CY up to an estimated volume of 3,000 CY. The combination of both the Common Excavation and Subgrade Correction items yielded an effective unit price of ($\$1.61 + \$6.52 = \$8.13$) per CY to handle and replace unsuitable materials.

In total 24,542 CY (verified via survey) of unsuitable materials were excavated. An additional 14,905 CY of materials were replaced within the construction area to establish the raised base grades. This work was also completed at the \$9.59/CY price as the conditions (placement methods) were similar to the removal effort(s). Minor adjustments to the contract specified volumes for Common Excavation and Re-Compacted Soil Barrier Layer were necessary to account for Common Excavation that was not required in areas that had not been excavated and those areas excavated to the original subbase grades four (4) feet lower than identified in Field Orders #3 - #5. The work identified for the unsuitable soil removal and associated replacements for Change Order #1 was completed for **\$334,510.08**.

Change Order No. 1 Total = **A + B = \$105,646.48 + \$334,510.08 = \$440,156.56**

Additional supporting documentation is provided in the attached Field Orders. Note that the cost estimates included in the various field orders was based off of design and survey conducted available at the time. The Change Order #1 Cost Summary Sheet supersedes all earlier estimates.

Attachments:

Field Order #1 (Rev 1) dated May 23, 2022

Field Order #3 dated June 2, 2022

Field Order #4 dated June 9, 2022

Field Order #5 dated June 16, 2022

Change Order #1 – Cost Summary Sheet

Change Order #1 - Revised Construction Plan Sheet 7

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

Change in Contract Price

Original Contract Price: \$ <u>1,793,334.82</u>	Original Contract Times: Substantial Completion: <u>9/2/22</u> Ready for final payment: <u>10/31/22</u>
Increase from previously approved Change Orders No. 1 to No. None \$ <u>None</u>	Increase from previously approved Change Orders No.1 to No. None : Substantial Completion: <u>None</u> Ready for final payment: <u>None</u>
Contract Price prior to this Change Order: \$ <u>1,793,334.82</u>	Contract Times prior to this Change Order: Substantial Completion: <u>9/2/22</u> Ready for final payment: <u>10/31/22</u>
Increase per this Change Order: \$ <u>440,156.56</u>	Change per this Change Order: Substantial Completion: <u>None</u> Ready for final payment: <u>None</u>
Contract Price incorporating this Change Order: \$ <u>2,233,491.38</u>	Contract Times with all approved Change Orders: Substantial Completion: <u>9/2/22</u> Ready for final payment: <u>10/31/22</u>

Recommended by Engineer (if required)
By: Dennis Delton
Title: Houston Engineering Inc Project Manager
Date: June 27, 2022

Authorized by Owner
By: _____
Title: _____
Date: _____

Accepted by Contractor

Approved by Funding Agency (if applicable)

Watertown Regional Landfill Cell 7

Cost Summary for Change Order #1
6/24/2022

Compost Pad Alterations/Modifications per Field Order #1 REV 1				
	Unit	Estimated Quantity	Unit Price (\$)	Extension (\$)
Additional sawcutting bituminous pavement	LF	708	\$1.46	\$1,033.68
Bituminous removals	SY	1301	\$0.80	\$1,040.80
Additional gravel surfacing	TON	1125	\$13.70	\$15,412.50
Additional bituminous paving	SY	3575	\$24.66	\$88,159.50
Furnish and install Geotextile Blanket	SY	--	--	--
			subtotal =	\$105,646.48

Cell 7 Grade Change per Field Orders #3 - #5

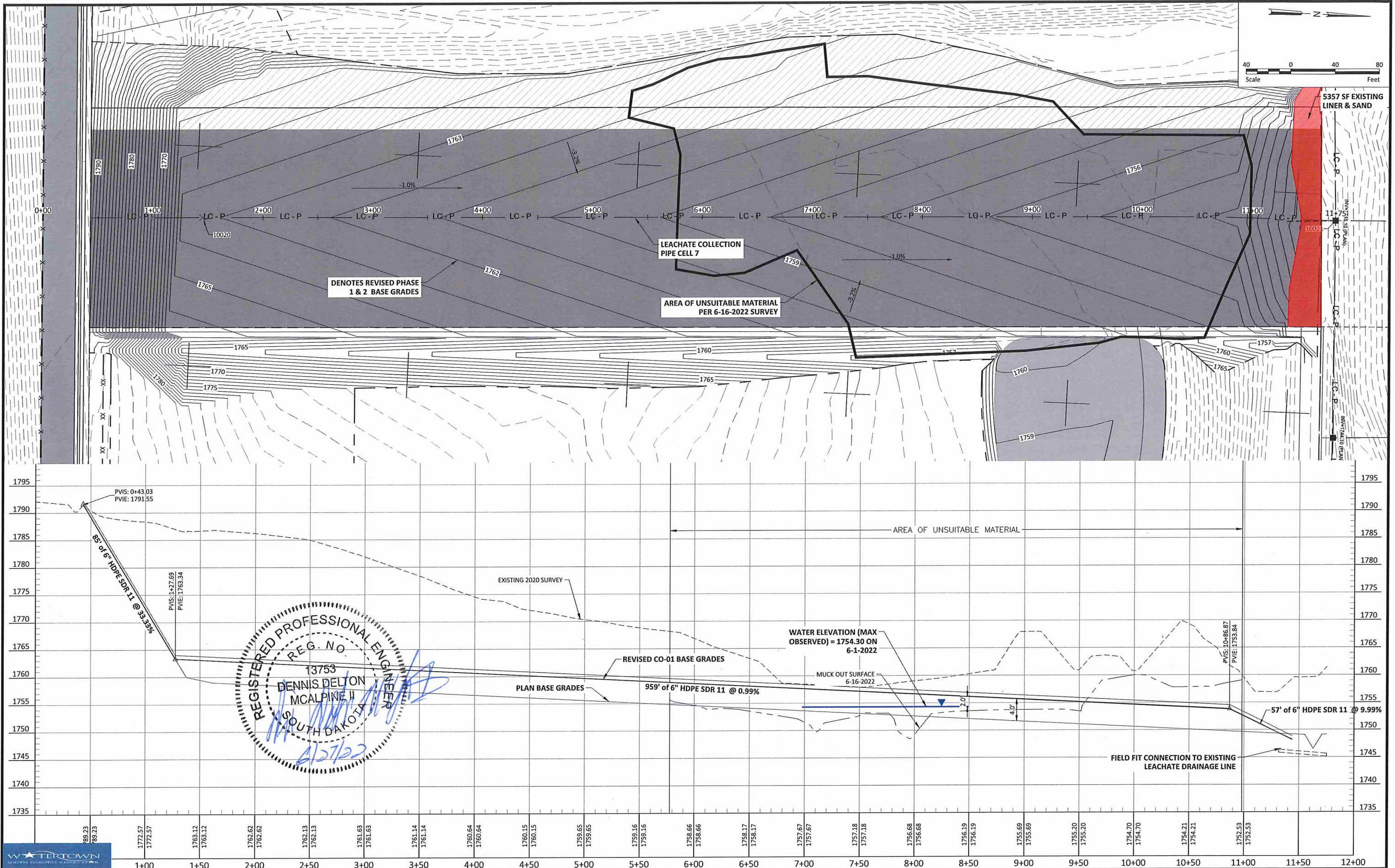
Total volume of subgrade removals/correction/muck out	CY	24,542	--	--
Subgrade Correction (per contract)	CY	3,000	\$6.52	--
Additional Subgrade Correction per FO-03	CY	21,542	\$9.59	\$206,587.78
Additional Fill Along Eastern Edge	CY	14,905	\$9.59	\$142,934.16
Buffer Layer placement per FO-03 (south of subgrade removal area)	CY	3,313	\$2.27	\$7,520.51
Common Excavation (CV) (P) deduct #1 (subgrade removal area to north)	CY	4,801	-\$1.61	-\$7,728.95
Common Excavation (CV) (P) deduct #2 (south of subgrade removal area)	CY	9,195	-\$1.61	-\$14,803.41
			subtotal =	\$334,510.08

Change Order #1 Grand Total = \$440,156.56

Existing Contract Amount = \$1,793,334.82

Revised Contract Amount per Change Order #1 = \$2,233,491.38

H:\JUN7007716\7716-0020 WRLF Cell 7CAD\Plans\7716_Pro & Exist Grades_FO_03 (Revised Sheet 7).dwg-7 LEACHATE COLLECTION PIPE CELL 7-6/24/2022 1:28 PM-(azigan)



1	REVISIONS PER SD DANR REGULATORY REVIEW	2-10-2022	AMZ	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of South Dakota. Dennis D. McAlpine License No. 13753	Date
2	REVISED CELL 7 BASE GRADES PER FO-03/CO-01	6-8-2022	AMZ		
3	REVISED CELL 7 BASE GRADES PER CO-01	6-23-2022	AMZ		
No.	Revision	Date	By		

		Maple Grove	Drawn by AMZ	Date 12-14-2021	WATERTOWN REGIONAL LANDFILL CELL 7 CONSTRUCTION PLANS CITY OF WATERTOWN, SOUTH DAKOTA	LEACHATE COLLECTION PIPE CELL 7 PROJECT NO. 7716-0020	SHEET 7
		P: 763.493.4522 F: 763.493.5572	Checked by DDM	Scale AS SHOWN			

FIELD ORDER NO.: 1 – Rev 1

Owner:	The City of Watertown, SD	Owner's Project No.:	2112
Engineer:	Houston Engineering, Inc.	Engineer's Project No.:	7716-0020
Contractor:	Dan Hart Patrol Service, LLC.	Contractor's Project No.:	
Project:	WRLF Cell 7 Construction		
Date Issued:	5/23/2022	Effective Date of Field Order:	5/23/2022

Contractor is hereby directed to promptly perform the Work described in this Field Order, issued in accordance with the General Conditions, for minor changes in the Work without changes in Contract Price or Contract Times. If Contractor considers that a change in Contract Price or Contract Times is required, submit a Change Proposal before proceeding with this Work.

Reference:

Specification Section(s): NA

Drawing(s) / Details (s): See Attached Revised Plan Sheet 17

Description:

This field order supersedes field order #1 dated May 16, 2022.

This revised field order (Rev 1) provides direction/understanding for minor work associated with additional bituminous removals & saw-cutting. This field order identifies the placement (fill) of gravel surfacing materials within the plan identified bituminous removal areas and the area between the east and middle compost trench/drainageways. Additional bituminous paving will be required to construct this field order and promote positive drainage (south to north) in the three (3) eastern most compost pad trenches/drainageways with a proposed minimum grade of 0.4%. The additional items for gravel surfacing, saw-cutting, bituminous removals and paving will be paid via the contract specified unit pricing. This field order assumes the gravel materials identified in Contract Item #31 will be used in addition to the plan identified gravel for the compost pad rehabilitation. A summary of the anticipated quantities to facilitate this field order is identified in an attached pdf.

A revised finished surface file will be provided via a follow-up email.

Attachments: Estimated quantity summary, revised Plan Sheet 17

Issued by Engineer

By: Dennis McAlpine
Title: Project Manager
Date: 5/23/2022

Watertown Regional Landfill Cell 7

Compost Pad Improvement

Design Data for Field Order #1 Rev 1

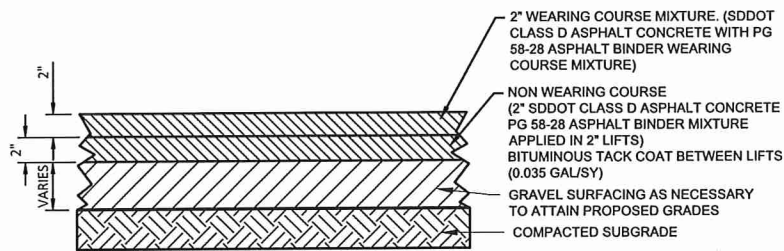
5/20/2022

- Pending Field Order Proposed longitudinal slope (%)
- Proposed length of improved trench (ft)
- Vertical drop to connection (ft)
- Existing subgrade w/removals vs -4in proposed - fill (CY)
- Gravel Mat's already in contract
- Additional Gravel volume (CY)
- Additional Gravel volume (TON)
- Additional Gravel Cost (\$) @ \$13.70 per TON
- Additional Sawcutting Bituminous Pavement (ft)
- Additional Sawcutting Bituminous Pavement @ \$1.46 per ft
- Additional Bituminous removals (SY)
- Bituminous removals Cost @ \$0.80 per SY
- Additional Bituminous paving (SY)
- Additional Bituminous paving @ \$24.66 per SY

	West Trench	Middle Trench	East Trench	Total
	0.4%	0.4%	0.4%	
	484.65	389.99	535.59	
	2.35	1.95	2.68	
				2851.5 CY
	614	479	1146	2240 CY
				511.5 CY
				941.2 TON
				\$12,893.88 TON (1000 TONS already in the contract per Contract Item 31)
	126.1	127.7		
	\$184.10	\$187.45	\$0.00	\$370.59
	223.4	18.9		
	\$178.72	\$111.12	\$0.00	\$289.84
				2636 SY
				\$65,013.01
				\$65,073.43
				Estimated Additional Cost (\$)

SEE SUPPLEMENTAL CHANGE ORDER #1
COST SUMMARY

H:\JUN700716\716-0020 WRLF Cell 7\CAD\Plans\716_Compost Pad_20220520_1 Revisions.dwg-17 COMPOST PAD-5/20/2022 5:05 PM-(az/gan)



TYPICAL PAVING SECTION
NOT TO SCALE



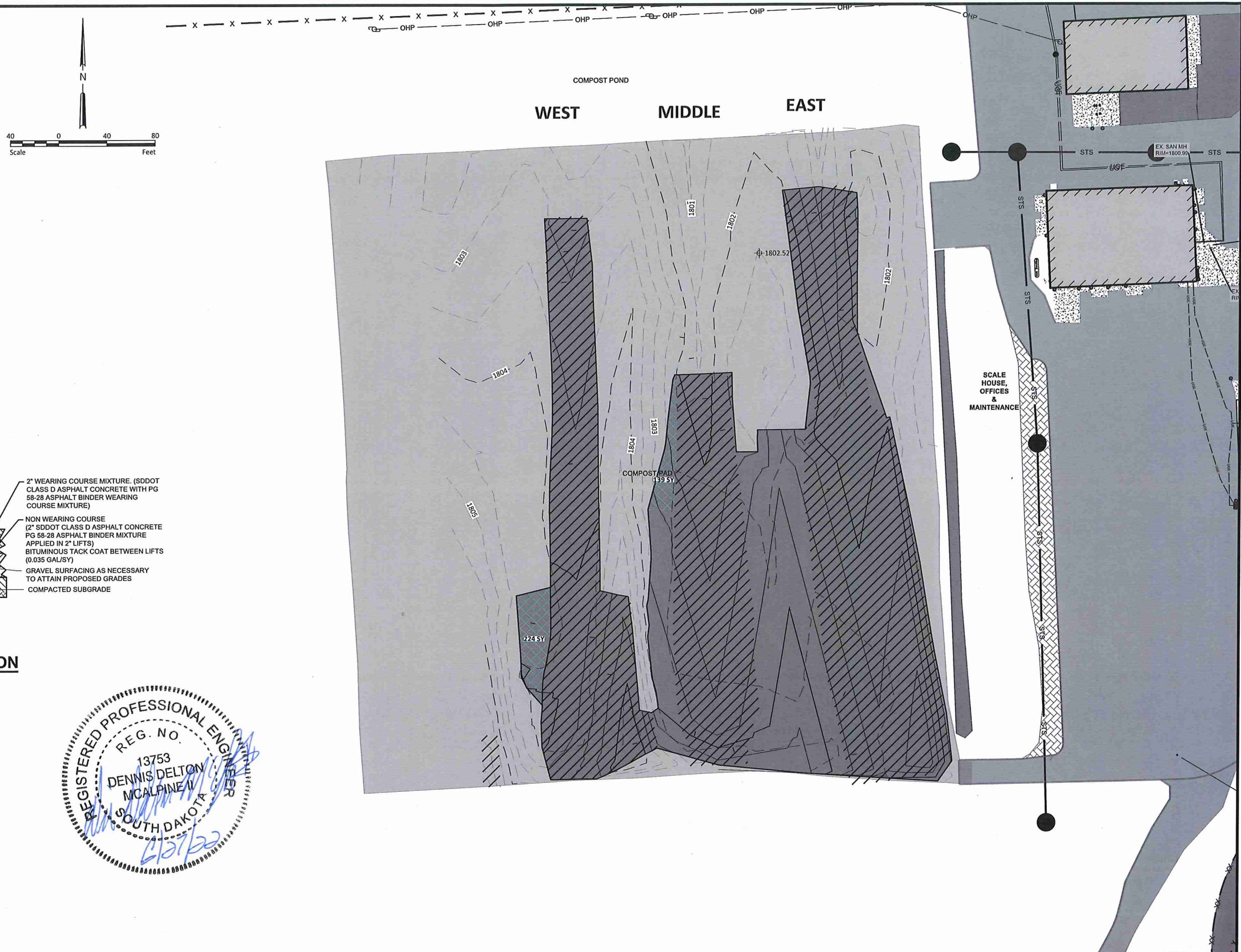
Maple Grove
P: 763.493.4522
F: 763.493.5572

Drawn by
AMZ
Checked by
DDM
Date
12-14-2021
Scale
AS SHOWN

WATERTOWN REGIONAL LANDFILL CELL 7
CONSTRUCTION PLANS
CITY OF WATERTOWN, SOUTH DAKOTA

COMPOST PAD
PROJECT NO. 7716-0020

SHEET
17



FIELD ORDER NO.: 3

Owner:	City of Watertown, SD	Owner's Project No.:	2112
Engineer:	Houston Engineering, Inc.	Engineer's Project No.:	7716-0020
Contractor:	Dan Hart Patrol Service, LLC.	Contractor's Project No.:	
Project:	WRLF Cell 7 Construction		
Date Issued:	6/2/2022	Effective Date of Field Order:	6/2/2022

Contractor is hereby directed to promptly perform the Work described in this Field Order, issued in accordance with the General Conditions, for minor changes in the Work without changes in Contract Price or Contract Times. If Contractor considers that a change in Contract Price or Contract Times is required, submit a Change Proposal before proceeding with this Work.

Reference:

Specification Section(s): NA

Drawing(s) / Details (s): Plan Sheet 7 – Leachate Collection Pipe

Description:

The discovery of a significant volume of unsuitable soils materials will necessitate removals in excess of the contract identified (estimated) subgrade removal line item. During topsoil removal activities crews discovered a large area of organic materials within the Phase 1 Cell 7 construction area. The area encompasses the entire width of proposed Cell 7 and extends approximately 800-feet south of the northern boundary of the Cell. As noted during a 5/19/2022 onsite meeting and subsequent weekly progress meetings the unsuitable/organic materials shall be removed so that compactable materials can be placed to provide a stable foundation for the proposed Cell 7 base liner system.

We are aware that during the excavation and removal of the unsuitable materials water was observed entering the excavation. Pumping/dewatering operations have been underway since the discovery of the unsuitable materials. It is paramount to the ongoing construction effort that dewatering operations continue throughout the removal and subsequent replacement of soil materials.

To provide separation from the exposed subgrade following removal of the organic/unsuitable materials we are proposing the following:

- The base grades (Cell floor only) within Cell 7 be raised 4ft. It is anticipated that this design change will provide the necessary separation from the exposed subgrade to allow for construction to proceed despite the area/adjacent soils not being fully drained.
- Modify the proposed leachate collection trench to remove the 2-foot grade change (depression) from the adjacent base grades of the Cell floor. The leachate collection pipe will be placed directly on the "v-graded" transition of the Cell floor base grades at the center of the Cell.

We are aware that this proposed work will necessitate changes to the construction workflow and associated equipment. We anticipate that the work north of the subgrade removal area will not be able to be completed with scrapers as initially intended. Instead, the work will need to be completed with truck and excavator placement as result of limited accessibility to the area. Per your 5/26/2022 Change of Directive memo, Dan Hart Patrol Service proposes that the additional unsuitable/organic materials be removed for a unit price of \$9.59/CY. The replacement

materials will also be placed at the \$9.59/CY unit price until conditions improve to allow for scraper placement operations and associated placement at the contract unit price of 2.27/CY for clay liner placement. Portions of the Cell floor base liner previously excavated will need to be raised (filled) to accommodate the revised liner elevation. This work will be completed as clay liner placement at the contract unit price of \$2.27/CY. Raising the grade of the Cell floor base grades will also result in two (2) deducts. The proposed change will result in a reduction in the excavation necessary to establish the Cell floor base grades on the portion(s) of Cell 7 not yet excavated to grade.

Attached is a summary of the anticipated projects costs based on the current area of organic/unsuitable material removals. Considering that only a portion of the Cell 7 area has been excavated it is likely that additional organic/unsuitable materials will be discovered. We assume that the rationale provided in this field order will provide the basis to manage future material removals and replacements.

Attachments: NA

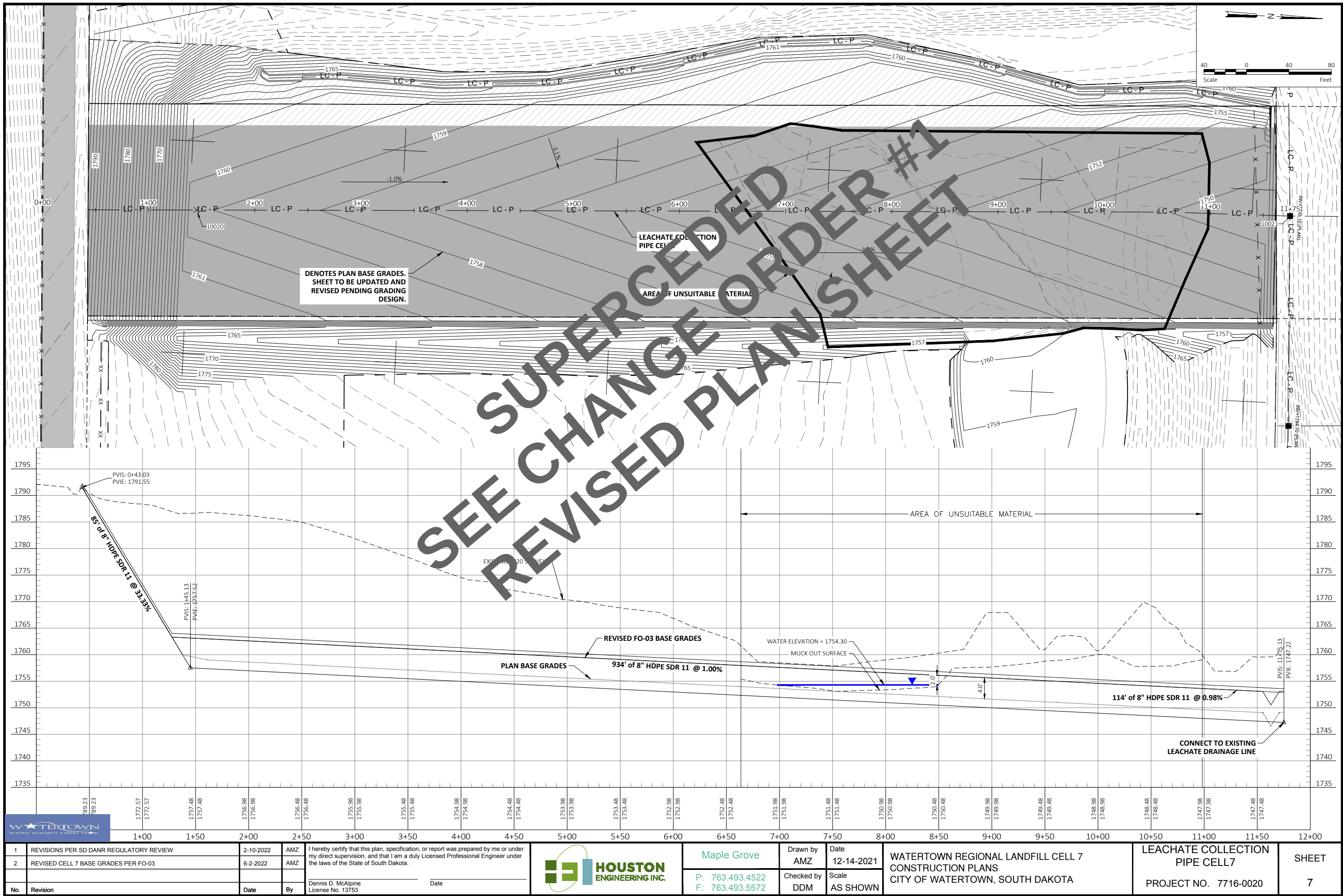
Issued by Engineer

By: Dennis McAlpine
Title: Project Manager
Date: 6/2/2022

Watertown Regional Landfill Cell 7
Cell 7 Revised Grades
Cost Summary for Field Order #3
6/2/2022

	Unit	Estimated Quantity	Unit Price (\$)	Extension (\$)	
Current total volume of subgrade removals	CY	9,406	--	--	Per CAD omits topsoil removal and common exc to remove existing access road. (existing road removed vs Scott Eng 6/1/2022 Muck Cleanout Survey)
Subgrade Correction (per contract)	CY	3,000	\$6.52	--	Quantity already accounted for in contract
Additional Subgrade Correction per FO-03	CY	6,406	\$9.59	\$61,433.54	Estimated quantity of removals in current work area
Buffer Layer placement per FO-03 (subgrade removal area to north)	CY	3,623	\$9.59	\$34,744.57	Fill to liner subbase with subgrade removal area to north. Assume all placement with truck/excavator as worst case. Operations will likely transition to scrapers as some point for the contract unit price of \$2.27/CY
Buffer Layer placement per FO-03 (south of subgrade removal area)	CY	3,637	\$2.27	\$8,256.07	Fill to liner subbase south of subgrade removal area as result of cell floor raise of 4-feet
Common Excavation (CV) (P) deduct #1 (subgrade removal area to north)	CY	5,653	-\$1.61	-\$9,101.87	Soil not excavated (4ft) as result of liner grade change.
Common Excavation (CV) (P) deduct #2 (south of subgrade removal area)	CY	5,687	-\$1.61	-\$9,156.09	Soil not excavated (2ft) as result of liner grade change (existing Cell 7 Access Road)
		Field Order #3 - Grand total		\$86,136.22	

H:\JUN700\716\716-0020 WRLF Cell 7\CAD\Plans\716_Pro & Exist Grades_F003 (Revised Sheet 7).dwg-7 LEACHATE COLLECTION PIPE CELL 7-6/2/2022 10:34 AM: (azigen)



1 REVISIONS PER SD DANR REGULATORY REVIEW		2-10-2022	AMZ	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of South Dakota. Dennis D. McAlpine License No. 13753
2 REVISED CELL 7 BASE GRADES PER FO-03		6-2-2022	AMZ	
No.	Revision	Date	By	



Maple Grove		Drawn by	Date
P: 763.493.4522 F: 763.493.5572		AMZ	12-14-2021
		Checked by	Scale
		DDM	AS SHOWN

WATERTOWN REGIONAL LANDFILL CELL 7
CONSTRUCTION PLANS
CITY OF WATERTOWN, SOUTH DAKOTA

LEACHATE COLLECTION PIPE CELL 7	SHEET
PROJECT NO. 7716-0020	7

FIELD ORDER NO.: 4

Owner:	City of Watertown, SD	Owner's Project No.:	2112
Engineer:	Houston Engineering, Inc.	Engineer's Project No.:	7716-0020
Contractor:	Dan Hart Patrol Service, LLC.	Contractor's Project No.:	
Project:	WRLF Cell 7 Construction		
Date Issued:	6/9/2022	Effective Date of Field Order:	6/9/2022

Contractor is hereby directed to promptly perform the Work described in this Field Order, issued in accordance with the General Conditions, for minor changes in the Work without changes in Contract Price or Contract Times. If Contractor considers that a change in Contract Price or Contract Times is required, submit a Change Proposal before proceeding with this Work.

Reference:

Specification Section(s): NA

Drawing(s) / Details (s): Plan Sheet 7 – Leachate Collection Pipe denoting revised Cell 7 grades
Plan Sheet 16 – Point Schedule denoting revised Cell 7 grades
Plan Sheet 22 – Liner Details revising leachate collection trench

Electronic Data: Revised Cell 7 Base Grade Surface File (.xml) for machine control
Revised Spreadsheet denoting Base Grade Surface Thickness Points

Description:

This field order provides the data/information initially identified in Field Order #3 to update the affected plan sheets and supporting construction information.

To maximize the separation distance from the bottom of the base liner and the fill materials within the unsuitable material removal/replacement area the leachate collection trench has been modified. The revised plan identifies removal of the 2-foot depression to install the trench. The trench (geotextile/pipe/rock combination) will be placed atop the channel created via the intersection of the western and eastern slopes (3% inward) at the middle of the Cell.

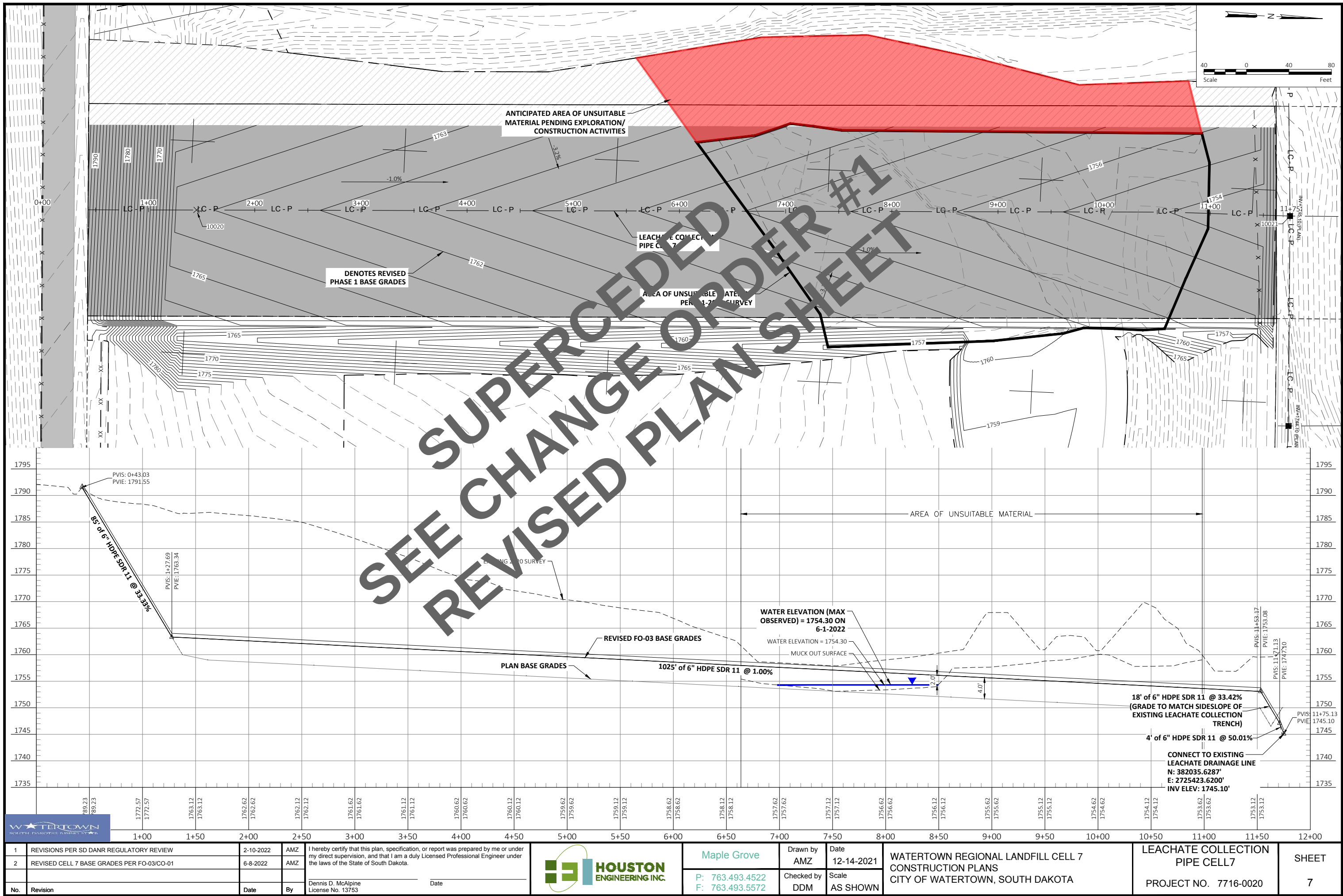
The terms of payment associated with the Cell 7 grade raise are identified in Field Order #3. This information will be formalized in pending Change Order #1.

Attachments: NA

Issued by Engineer

By: Dennis McAlpine
Title: Project Manager
Date: 6/9/2022

H:\JUNIT700\716-0020 WRLF Cell 7CAD\Plans\716_Pro & Exst Grades_F0w3 (Revised Sheet 7).dwg-7 LEACHATE COLLECTION PIPE CELL 7-6-8-2022 12:11 PM: (asigen)



1	REVISIONS PER SD DANR REGULATORY REVIEW	2-10-2022	AMZ	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of South Dakota.		Maple Grove	Drawn by AMZ	Date 12-14-2021	WATERTOWN REGIONAL LANDFILL CELL 7 CONSTRUCTION PLANS CITY OF WATERTOWN, SOUTH DAKOTA	LEACHATE COLLECTION PIPE CELL7	SHEET 7
2	REVISED CELL 7 BASE GRADES PER FO-03/CO-01	6-8-2022	AMZ			P: 763.493.4522 F: 763.493.5572	Checked by DDM	Scale AS SHOWN			
No.	Revision	Date	By			Dennis D. McAlpine License No. 13753	Date				

POINT SCHEDULE TABLE

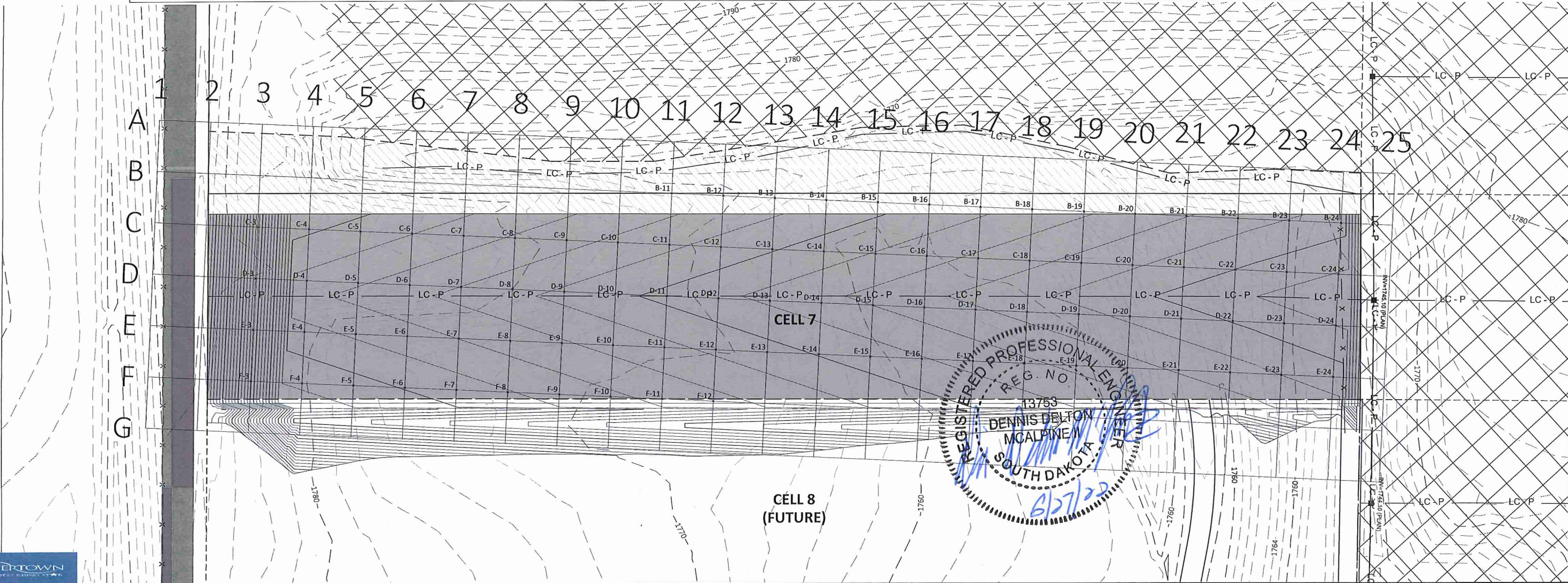
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
10000	380837.7	2724734	1785	36" RCP APRON INV
10001	381079.7	2724725	1796.77	STS 6 RIM
10002	381079.7	2724725	1788.36	STS 6 INV S
10003	381079.7	2724725	1788.36	STS 6 INV N
10004	381324.4	2724716	1796.84	STS 7 RIM
10005	381324.4	2724716	1789.09	STS 7 INV S
10006	381324.4	2724716	1789.09	STS 7 INV N
10007	381574.3	2724707	1796.84	STS 8 RIM
10008	381574.3	2724707	1789.84	STS 8 INV S
10009	381574.3	2724707	1789.84	STS 8 INV N
10012	381824.1	2724698	1796.84	STS 9 RIM
10013	381824.1	2724698	1790.59	STS 9 INV S
10014	381824.1	2724698	1791.59	STS 9 INV N
10015	382073.5	2724689	1796.84	STS 10 RIM
10016	382073.5	2724689	1792.34	STS 10 INV S
10017	382073.5	2724689	1793.09	STS 10 INV N
10018	382323.3	2724679	1796.84	STS 11 RIM
10019	382323.3	2724679	1793.84	STS 11 INV S
10020	381006.5	2725465	1757.52	8" HDPE SLOPE TRANSITION INV
10021	382035.6	2725424	1747.22	8" HDPE CONNECTION TO MAIN INV
10022	381079.6	2724653	-1.37	18" RCP INV W
10023	381079.7	2724725	1789.14	STS 6 INV W
10024	381824.5	2724634	1798.5	18" RCP INV W
10025	381824.1	2724698	1793.7	STS 9 INV W
10026	382073.5	2724632	1798.5	18" RCP INV W
10027	382073.5	2724689	1793.97	STS 10 INV W

GRID POINT	NORTHING	EASTING	ELEVATION
B-11	381350	2725350	
B-12	381400	2725350	
B-13	381450	2725350	
B-14	381500	2725350	
B-15	381550	2725350	
B-16	381600	2725350	
B-17	381650	2725350	
B-18	381700	2725350	
B-19	381750	2725350	
B-20	381800	2725350	
B-21	381850	2725350	1757.032
B-22	381900	2725350	1756.467
B-23	381950	2725350	1755.952
B-24	382000	2725350	1755.433
C-3	380950	2725400	1776.465
C-4	381000	2725400	1765.155
C-5	381050	2725400	1764.59
C-6	381100	2725400	1764.026
C-7	381150	2725400	1763.461
C-8	381200	2725400	1762.896
C-9	381250	2725400	1762.332
C-10	381300	2725400	1761.767

C-11	381350	2725400	1761.202
C-12	381400	2725400	1760.637
C-13	381450	2725400	1760.073
C-14	381500	2725400	1759.508
C-15	381550	2725400	1758.943
C-16	381600	2725400	1758.379
C-17	381650	2725400	1757.814
C-18	381700	2725400	1757.249
C-19	381750	2725400	1756.684
C-20	381800	2725400	1756.12
C-21	381850	2725400	1755.555
C-22	381900	2725400	1754.99
C-23	381950	2725400	1754.459
C-24	382000	2725400	1753.94
D-3	380950	2725450	1776.377
D-4	381000	2725450	1763.678
D-5	381050	2725450	1763.114
D-6	381100	2725450	1762.549
D-7	381150	2725450	1761.984
D-8	381200	2725450	1761.419
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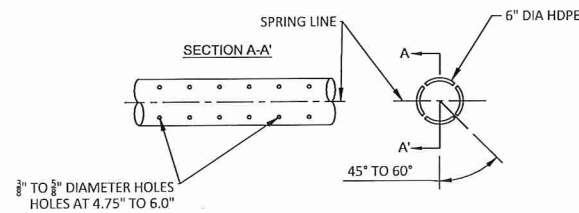
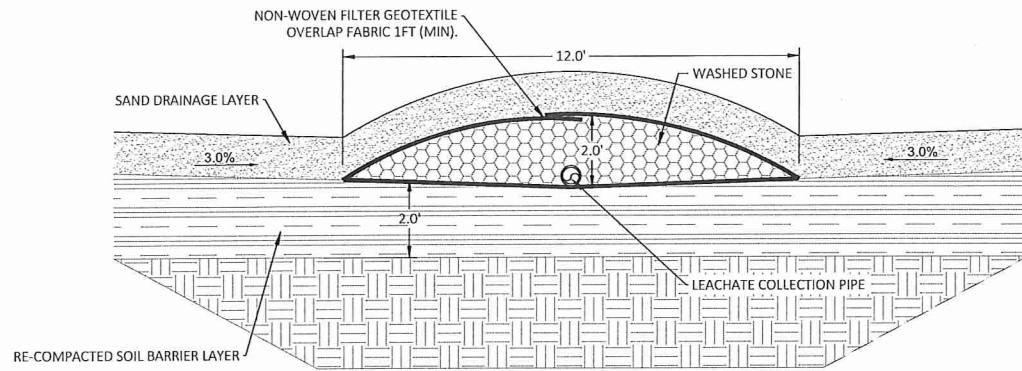
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D-17	381650	2725450	1757.12
D-18	381700	2725450	1756.686
D-19	381750	2725450	1756.251
D-20	381800	2725450	1755.817
D-21	381850	2725450	1755.383
D-22	381900	2725450	1754.948
D-23	381950	2725450	1754.481
D-24	382000	2725450	1754.001
E-3	380950	2725500	1776.289
E-4	381000	2725500	1764.287
E-5	381050	2725500	1763.852
E-6	381100	2725500	1763.418
E-7	381150	2725500	1762.984
E-8	381200	2725500	1762.549
E-9	381250	2725500	1762.115
E-10	381300	2725500	1761.681
E-11	381350	2725500	1761.246
E-12	381400	2725500	1760.812

E-13	381450	2725500	1760.378
E-14	381500	2725500	1759.943
E-15	381550	2725500	1759.509
E-16	381600	2725500	1759.075
E-17	381650	2725500	1758.64
E-18	381700	2725500	1758.206
E-19	381750	2725500	1757.772
E-20	381800	2725500	1757.337
E-21	381850	2725500	1756.903
E-22	381900	2725500	1756.469
E-23	381950	2725500	1755.988
E-24	382000	2725500	1755.507
F-3	380950	2725550	1776.201
F-4	381000	2725550	1765.807
F-5	381050	2725550	1765.373
F-6	381100	2725550	1764.938
F-7	381150	2725550	1764.504
F-8	381200	2725550	1764.07
F-9	381250	2725550	1763.635
F-10	381300	2725550	1763.201
F-11	381350	2725550	1762.767
F-12	381400	2725550	1762.332

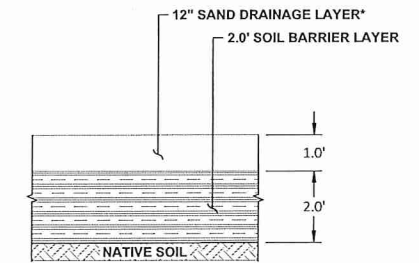


H:\JUN17\00716\716-0020 WRLF Cell 7\CAD\Plans\716_Point Schedule_Revised.dwg-16 POINT SCHEDULE-6/8/2022 3:04 PM-(ezgan)

1	REVISED CELL 7 BASE GRADES PER FO-03/CO-01	6-8-2022	AMZ	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of South Dakota.	Maple Grove	Drawn by AMZ	Date 12-14-2021	WATERTOWN REGIONAL LANDFILL CELL 7 CONSTRUCTION PLANS CITY OF WATERTOWN, SOUTH DAKOTA	POINT SCHEDULE	SHEET
No.	Revision	Date	By	Dennis D. McAlpine License No. 13753	P: 763.493.4522 F: 763.493.5572	Checked by DDM	Scale AS SHOWN	PROJECT NO. 7716-0020		16

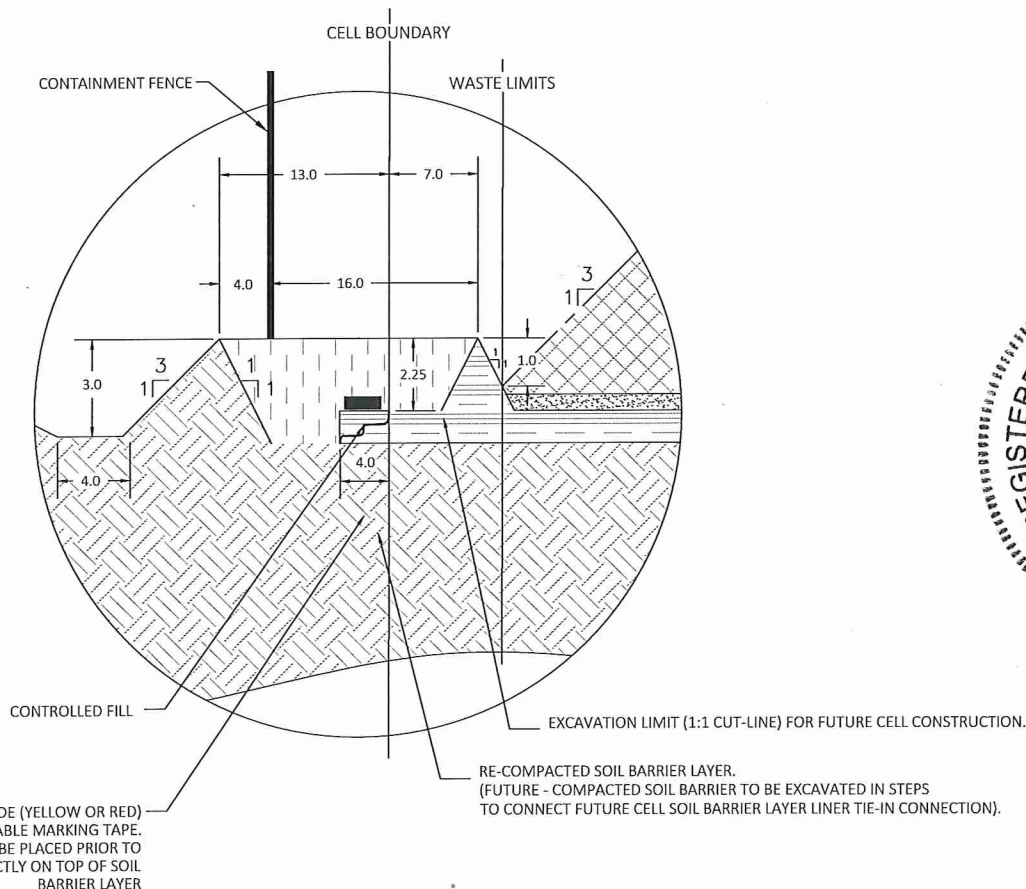


A LEACHATE COLLECTION TRENCH
22 NOT TO SCALE

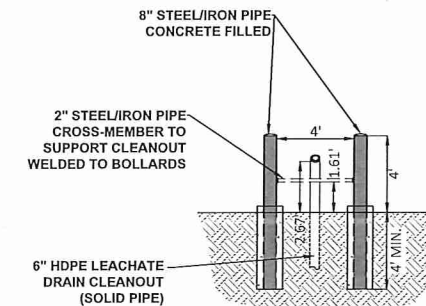
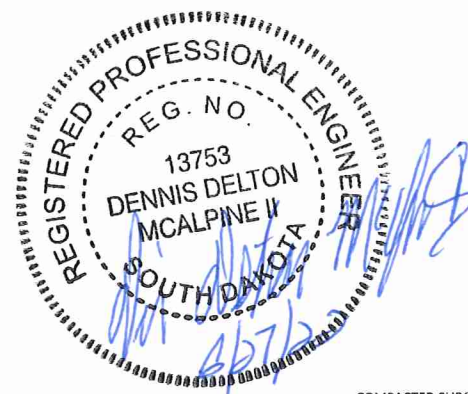


NOTE:
* 18\"/>

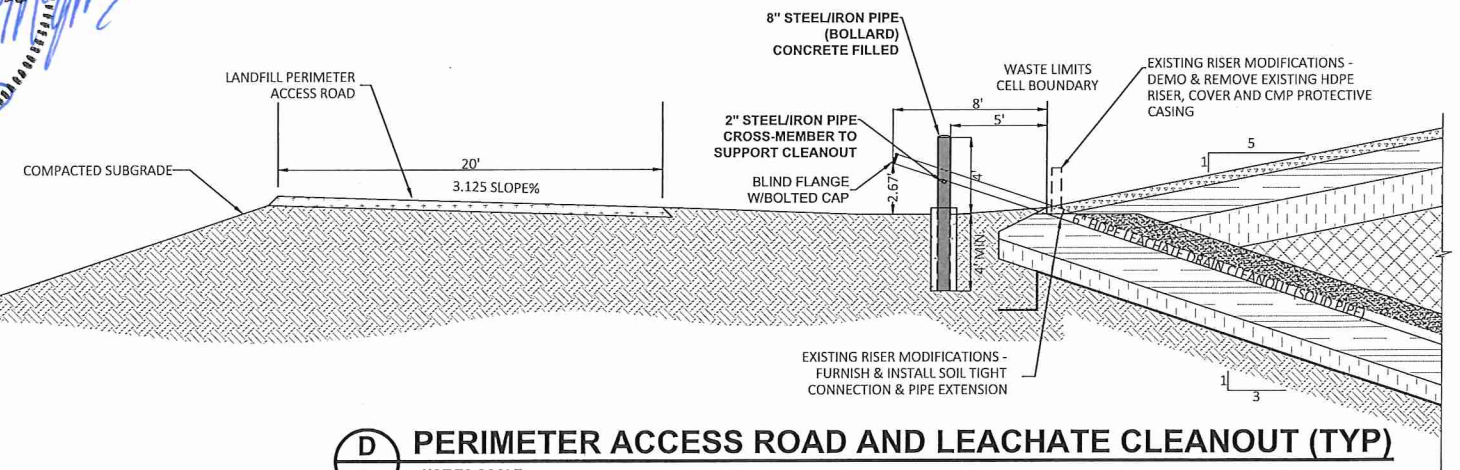
B LANDFILL BASE LINER
22 NOT TO SCALE



C PHASE DELINEATION BERM
22 NOT TO SCALE



NOTE: ALL STEEL PIPE (EXPOSED) PAINTED "SAFETY YELLOW"



D PERIMETER ACCESS ROAD AND LEACHATE CLEANOUT (TYP)
22 NOT TO SCALE

H:\JUN700V716\716-020 WRLF Cell 7\CAD\Plans\716_Details_Rev_20220608.dwg-22 DETAILS - LINER AND LEACHATE COLLECTION-6/9/2022 1:29 PM-(adigan)



1	REVISED CELL 7 BASE GRADES PER FO-03/CO-01	6-8-2022	AMZ	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of South Dakota.
No.	Revision	Date	By	Dennis D. McAlpine License No. 13753



Maple Grove	Drawn by AMZ	Date 12-14-2021
P: 763.493.4522 F: 763.493.5572	Checked by DDM	Scale AS SHOWN

WATERTOWN REGIONAL LANDFILL CELL 7
CONSTRUCTION PLANS
CITY OF WATERTOWN, SOUTH DAKOTA

DETAILS - LINER AND
LEACHATE COLLECTION
PROJECT NO. 7716-0020

SHEET
22

FIELD ORDER NO.: 5

Owner:	City of Watertown, SD	Owner's Project No.:	2112
Engineer:	Houston Engineering, Inc.	Engineer's Project No.:	7716-0020
Contractor:	Dan Hart Patrol Service, LLC.	Contractor's Project No.:	
Project:	WRLF Cell 7 Construction		
Date Issued:	6/16/2022	Effective Date of Field Order:	6/16/2022

Contractor is hereby directed to promptly perform the Work described in this Field Order, issued in accordance with the General Conditions, for minor changes in the Work without changes in Contract Price or Contract Times. If Contractor considers that a change in Contract Price or Contract Times is required, submit a Change Proposal before proceeding with this Work.

Reference:

Specification Section(s): NA

Drawing(s) / Details (s):

Electronic Data: Revised **Phase 2** Cell 7 Base Grade Surface File (.xml) for machine control

Description:

This field order provides the data/information to provide direction to DHPS to extend (project) the 3% cross slope on the western edge of Cell 7 (Phase 1) into the Phase 2 area.

The associated change(s) per this field order may negate the need for Contract Item #12 – Leachate Relief Trench (Cell 7/Cell 1 Boundary). The revised elevations of the base grades are now higher than the existing sand observed via recent test-pit excavation at the transition of Cell 1 & Cell 7.

Placement of the trench is subject to the excavation operations and associated placement of the re-compacted soil barrier layer being completed under dry conditions.

Attachments: Revised **Phase 2** Cell 7 Base Grade Surface File (.xml) for machine control

Issued by Engineer

By: Dennis McAlpine
Title: Project Manager
Date: 6/16/2022