



Bismarck Airport

DATE: 6/8/2021

FROM: Gregory Haug, Airport Director

ITEM:

Consider Change Order #3 to the September 11, 2020 agreement with KLE for Wetland Phase 5/6.

REQUEST:

Consider Change Order #3 to the September 11, 2020 agreement with KLE for Wetland Phase 5/6.

Please place this item on the June 22, 2021 City Commission meeting agenda.

BACKGROUND INFORMATION:

The Board approved actions related to the Wetland Phase 5 Project on September 8, 2020. KLE has requested elimination of the use of horizontal inclinometers below active pavements (Runways and Taxiways) while boring under the pavements. The Airports Consulting engineers and the Federal Aviation Administration (FAA) agree with elimination of the horizontal inclinometer requirement. However, both the engineers and the FAA require the contractor (KLE) to submit and follow an acceptable ground movement monitoring plan in accordance with the specifications and this change order. This will verify absence of settlement and voids as the contractor micro tunnels under runways and taxiways. As a result of this change KLE proposes a deduct of \$33,213.35. The proposed cost changes appear allowable, allocable, and reasonable. The total changed cost reduces the cost from \$11,457,076.71 and results in a new contract total of \$11,423,863.36.

The FAA concurred with Change Order #3. The total project cost will remain within the project budget contingencies approved by the Board.

RECOMMENDED CITY COMMISSION ACTION:

Approve Change Order #3 to the September 11, 2020 agreement with KLE for Wetland Phase 5/6 at Enclosure 1 which decreases cost by \$33,213.35 resulting in a new contract total of \$11,423,863.36.

STAFF CONTACT INFORMATION:

Greg Haug | Airport Director, 355-1800 or ghaug@bismarcknd.gov

1 Enclosure

1. Change order #3

ON JUNE 22, 2021
AGENDA

CONTRACT CHANGE ORDER FORM

DEPARTMENT

Contract between the City of Bismarck and KLE CONSTRUCTION

Contract Number: 2020-0066 Change Order Number: #3

Project/Subproject: APG. AIP 62. CONST Original Contract Amt: \$11,401,538.00

Project Description: WETLAND PHASE 5 & 6 (HORIZONTAL INCLINOMETER) DELETE REQ. FOR

Previous Contract Amount: \$11,457,076.71

Change Order Amount: MINUS (\$33,213.35) SUBSTANTIAL COMPLETION: OCT 15, 2021 NEW TOTAL: \$11,423,863.36 FINAL ACCEPTANCE 60 DAYS FROM FINAL COMPLETION.

Original Contract Date: SEPT 11, 2020 Change in Contract Timeline: NO CHANGE

Within Project Scope: (Y) / N*

Within Project Funding: (Y) / N**

**If not within project scope, attach description of change in scope for Board approval.*

***If not within project funding, attach revised Project Budget for Board approval.*

Type of Change Order

Non Design-related Change Order: These change orders include unforeseen conditions, code-related issues, and building inspector changes.

Design-related Change Order: These change orders include unforeseen conditions that affect the appearance, layout, functionality, dimensions, and/or quality of the project.

Emergency Field Condition Change Orders: These change orders include any condition that causes an emergency situation where safety or other immediate losses may occur.

Other: (describe) REMOVE HORIZONTAL INCLINOMETER REQ IN FAVOR OF ART REQ
SEE DOHS DISCUSSION

Project Manager Signature: (<\$15,000) _____ Date _____

Department Head Signature: (<\$25,000) _____ Date _____

ADMINISTRATION

City Administrator Signature: (<\$50,000) _____ Date _____

Add to Commission Consent Agenda

COMMISSION APPROVAL

Commission Approval Date: _____

Attach minutes for Commission Approval

FISCAL

Comments: _____
Signature Date Completed

TO ALL DEPARTMENTS: Please attach a copy of the change order

Enc 1

Timothy Thorsen

From: Holzer, Mark (FAA) <Mark.Holzer@faa.gov>
Sent: Monday, June 7, 2021 7:43 AM
To: Timothy Thorsen
Cc: tjneigum@gmail.com; Kevin Ensor; 'Tony Theurer'; 'Liz Pitzer'; Anderson, David P (FAA); Lund, Nels C.
Subject: FAA Change Order C-03-1 for BIS Wetland Removal Phase 5 (KLJ 1805-02200.3) - Horizontal Inclinometer
Attachments: CO3-KLE-Combined.pdf

External Email - Use caution clicking links or opening attachments

Tim

The FAA concurs as attached with BIS Removal of Wetlands to Reduce Wildlife Attractants- Phase 5/6 for 3-38-0003-0064-2020 and 3-38-0003-0062-2020 as KLE Construction, LLC for Change Order #3-1 Horizontal Inclinometer Elimination as follows:

Proposed change includes removal of horizontal inclinometer, which was included as a supplemental settlement-monitoring tool to be used adjacent to a micro-tunnel installation below Runway 13-31. Note that while Engineer investigating this and negotiating with the contractor, contractor offered additional deduct. See attached. They are also doing additional survey work in order to more closely monitor the surface during the installation, which is better defined below as well. Substantial discussion and negotiation between KLJ and the contractor have occurred, which has resulted in a substantial cost savings and monitoring that is acceptable to the underground engineer.

	AIP Grant 062	AIP Grant 064	Total
Total Contract Amount Prior to this Change Order	\$ 6,558,793.00	\$ 4,898,283.71	\$ 11,457,076.71
Change Resulting from this Change Order	(33,213.35)	-	(33,213.35)
Total Contract Amount After this Change Order	\$ 6,525,579.65	\$ 4,898,283.71	\$ 11,423,863.36

Calendar Days	
Completion date prior to this Change Order	October 15, 2021
Change resulting from this Change Order	0
Revised completion date from this Change Order	October 15, 2021

Airport Sponsor is recommending removal of the inclinometer requirement due to potential conflicts with existing storm drain utilities which have been verified by recent utility potholing. The storm drains would make installation of a horizontal inclinometer problematic/risky (storm drains would conflict). In addition, Airport Sponsor have discussed means and methods extensively with contractor, which includes their tunneling methodology, and proposed surface monitoring methods. The contractor has proposed completing a more comprehensive surface monitoring program than is/was required by the specifications. Specifically, this includes increasing the number of surface survey points monitored during tunneling, and doubling the frequency of the survey readings.

The contractor has provided a detailed cost breakdown of the inclinometer installation (deduct of \$33,213). This includes the inclinometer materials, installation and probing during constriction. Airport Sponsor has reviewed the estimate, and have had a number of discussions with contractor to ensure that this price includes all the necessary components. The cost is lower than originally estimated, due to a shorter than anticipated inclinometer installation length and monitoring period. Based on our review, the Airport Sponsor believes the proposed installation components and cost deduct is appropriate, relative to the original requirements.

The Contractor has requested elimination of the horizontal inclinometers below active pavements. This is acceptable, however, a Ground Movement Monitoring Plan must be formally submitted, approved, and implemented in accordance with the requirements of Section 33 05 4, Section 1.05 N and Section 33 05 7, Section 1.05 M. Further, per the Agreement Between Owner and Contractor, Article 3, Contract Time, no micro-tunneling shall be allowed within 20 feet of the Runway 13-31 pavement section until the micro-tunneling and pilot tube auger boring for Runway 3-21 have been completed and accepted, including the ten (10) calendar day settlement monitoring per the approved Ground Movement Monitoring Plan.

All paved surfaces shall be monitored per Sections 33 05 4 and 33 05 7 for an additional ten (10) calendar days after completion of trenchless storm installation activities to verify the absence of settlement. All paved surfaces shall be monitored again within ten (10) calendar days prior to Final Inspection per the approved Ground Movement Monitoring Plan to verify the absence of settlement. Further, a ground penetrating radar (GPR) survey shall be completed following the trenchless installations for detection of voids below existing pavements. The Contractor shall also meet the following survey requirements: Centerline monitoring points shall be placed at a spacing of 25 feet along each micro-tunnel alignment. Monitoring points shall also be placed every 10 feet along the centerline with offsets of 15 feet and 30 feet to either side of centerline and at a spacing of 25 feet along the alignment. These monitoring points shall be surveyed every 4 hours while actively tunneling. Monitoring will also take place each day before boring/tunneling. While actively tunneling, the points that are 50 feet in front and 50 feet behind shall be monitored to ensure no settlement or movement is occurring due to these activities. Daily readings of surface monitoring points and inclinometers shall be continued until ground movements are less than 0.02 feet per day. Points, laser survey and inclinometers shall be monitored to the specified accuracy of 0.01 referenced to a benchmark located at least 125 feet from the shafts or micro-tunnel alignment. Nails shall not be utilized in the pavement surfaces.

The proposed cost appears to be allowable, allocable and reasonable.

In review of the change order that provided a bid cost price analysis performed by the Contractor for sponsor, the FAA DMA ADO finds the amount to be fair and reasonable.

The following limitations apply to this action:

1-This determination is solely for the purpose of establishing eligibility of costs under the AIP program. This approval does not represent a commitment of Federal funds in addition to the original grant obligation.

2-The incorporation of any non-participating work items must not directly or indirectly result in any additional cost to the AIP-eligible portion of the project. Please maintain a separate and accurate cost accounting of any non-participating work that will permit a third party auditor to verify proper allocation of costs.

3-The CATX document appears to include all the projects reflected in these change orders and if changes later are proposed, the sponsor shall update the NEPA determination.

We shall place your final accepted KLE Construction, LLC for #3-1 change order – Phase 5/6 for BIS Removal of Wetlands to Reduce Wildlife Attractants in the project files for these grants.

Your Closeout Report shall include this KLE Construction #3-1Change order as applicable.

Please forward a copy of the executed changes to my attention as soon as it is available and fully executed.

Mark J. Holzer
Program Manager
Federal Aviation Administration

Dakota Minnesota Airports District Office
2301 University Drive, Bldg 23B
Bismarck, ND 58504
701.323.7393

Change Order No. 3
Date March 22, 2021

Airport Name Bismarck Airport
Location Bismarck, North Dakota
Contract Description Removal of Wetlands to Reduce Wildlife Attractants
Contract Date September 11, 2020

AIP Project # 3-38-0003-0062-2020, 3-38-0003-0064-2020
KLJ Project # 1805-02200.3
Owner's Project # APG.AIP62.CONST, APG.AIP64.CONST



Owner	Contractor	Engineer
City of Bismarck	KLE Construction, LLC	KLJ
PO Box 991	4921 Hwy 85	4585 Coleman Street
Bismarck, ND 58502-0991	Williston, ND 58801	Bismarck, ND 58503

General Reason for Change (quantify and explain details in sections 2 and 3)
 CO 3-1. Horizontal Inclinometer Elimination

	AIP Grant 062	AIP Grant 064	Total
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Calendar Days	
Completion date prior to this Change Order	October 15, 2021
Change resulting from this Change Order	0
Revised completion date from this Change Order	October 15, 2021

Change Order approved by:

Date

Date

Date

Brierley Associates

KLE Construction, LLC

City of Bismarck

Summary of Changes

Airport Name Bismarck Airport
 Location Bismarck, North Dakota
 AIP Project # 3-38-0003-0062-2020, 3-38-0003-0064-2020
 Contractor KLE Construction, LLC

Change Order No. 3
 Section 2

KLJ Project # 1805-02200.3
 Owner's Project # APG.AIP62.CONST, APG.AIP64.CONST

Item #	Spec #	Item	Quantities			Unit	Unit Price	Revised Cost	Changed Cost
			Planned	Revised	Change				
AIP GRANT 062									
Schedule 1, Division 1, Base Bid - Subsurface Storm Drain Improvements from Runway 13-31 to Yegen Road including Stormwater Lift Station, Concrete Headwall with Slide Gates, Microtunneling, and Pilot Tube Auger Boring; Storm Drain improvements from Yegen Road to Apple Creek Outfall including Grading, Cable Concrete System, Underdrains, Sheet Pile Wall, and Pilot Tube Auger Boring.									
1	P-101	Pavement Removal	500			S.Y.	\$ 6.00	\$ -	\$ -
2	P-101	Cold Milling	155			S.Y.	5.00	-	-
3	P-101	Remove and Salvage Existing Sump Pump and Electrical Equipment	2			Each	1,500.00	-	-
4	P-101	Remove and Dispose of Existing Reinforced Concrete Pipe (All Sizes)	220			L.F.	20.00	-	-
5	P-101	Remove and Salvage 44x68 Inch Reinforced Concrete Arch Pipe	307			L.F.	30.00	-	-
6	P-101	Remove and Salvage 36x58 Inch Reinforced Concrete Arch Pipe	200			L.F.	30.00	-	-
7	P-152	Unclassified Excavation	4,669			C.Y.	9.00	-	-
8	P-620	Pavement Marking	5,285			S.F.	4.00	-	-
9	D-701	Reinstall 36x58 Inch Reinforced Concrete Arch Pipe	200			L.F.	120.00	-	-
10	D-701	Reinstall 36x58 Inch Reinforced Concrete Arch Pipe FES	4			L.F.	800.00	-	-
11	D-701	Reinstall 44x68 Inch Reinforced Concrete Arch Pipe	307			L.F.	165.00	-	-
12	D-701	Reinstall 44x68 Inch Reinforced Concrete Arch Pipe FES	4			L.F.	900.00	-	-
13	D-701	24-Inch Reinforced Concrete Pipe, Cl. V	624			L.F.	165.00	-	-
15	D-701	40X65 Inch Reinforced Concrete Arch Pipe, Cl. V	200			L.F.	650.00	-	-
16	D-701	12-Inch PVC Storm Sewer Pipe (SDR 26 Sewer Pipe)	290			L.F.	105.00	-	-
17	D-701	24-Inch Reinforced Concrete End Section with Trash Guard	4			Each	1,850.00	-	-
18	D-701	30-Inch Reinforced Concrete End Section with Trash Guard	2			Each	2,500.00	-	-
20	D-701	40X65 Inch Reinforced Concrete Arch Pipe End Section with Trash Guard	2			Each	8,500.00	-	-
21	D-705	6-Inch Perforated PVC Underdrain Pipe without Filter Sock	3,952			L.F.	15.00	-	-
22	D-705	6-Inch Solid PVC SDR 26 Pipe	40			L.F.	45.00	-	-
23	D-705	8-Inch Solid PVC SDR 26 Pipe	20			L.F.	55.00	-	-
24	D-705	Porous Material No. 2	1,445			C.Y.	90.00	-	-
25	D-751	60-Inch Storm Drain Inlet	1			Each	9,500.00	-	-
26	D-751	72-Inch Storm Manhole / Drain Inlet	11			Each	12,500.00	-	-
27	D-751	96-Inch Storm Drain Inlet	2			Each	15,000.00	-	-
28	D-751	Core Drill Existing Manhole - 12 Inch	2			Each	3,500.00	-	-
29	F-162	Temporary 8-Ft. Chain-Link Fence (One Time Payment)	100			L.F.	20.00	-	-
30	F-162	Reinstall 8-Ft. Chain-Link Fence	100			L.F.	75.00	-	-
31	T-901	Seeding (#5 Midgrass/Shortgrass)	2.00			Acre	650.00	-	-
32	T-905	Topsoiling	769			C.Y.	12.00	-	-
33	T-908	Mulching	2.00			Acre	2,800.00	-	-
34	03 3000	Concrete Headwall	1			L.S.	250,000.00	-	-
35	31 6216_13	Sheet Pile Wall	1			L.S.	35,000.00	-	-
36	33 05 07.36	Pilot Tube Guided Auger Boring Obstruction Removal	200			C.Y.	85.00	-	-
37	33 05 07.36	Disposal of Spoil Material from Pilot Tube Guided Auger Boring	75			C.Y.	45.00	-	-
38	33 05 07.36	Pilot Tube Guided Auger Boring - 8-Inch Fused PVC or HDPE SDR 11	68			L.F.	900.00	-	-
39	33 05 07.36	Pilot Tube Guided Auger Boring - 24-Inch RCP	240			L.F.	1,300.00	-	-
40	33 05 07.36	Pilot Tube Guided Auger Boring - 30-Inch RCP	68			L.F.	1,850.00	-	-
41	33 05 07.36	Ground Movement Monitoring Plan	1			L.S.	45,000.00	-	-
42	33 05 24	Microtunneling Obstruction Removal	200			C.Y.	1.00	-	-
43	33 05 24	Disposal of Spoil Material from Microtunneling	470			C.Y.	20.00	-	-
44	33 05 24	Microtunneling	992			L.F.	2,904.00	-	-
45	33 05 24	Ground Movement Monitoring Plan	1			L.S.	30,000.00	-	-
47	33 4925	Slide Gate	2			Each	25,000.00	-	-
48	BIS-302	Aggregate Base Course - Class 5	175.00			Ton	85.00	-	-
49	BIS-401	AC Patch (FAA Class)	160.00			Ton	135.00	-	-
50	BIS-402	Bituminous Tack Coat	35			Gal.	7.00	-	-
52	Plan Notes	Waste (On-Site)	585			C.Y.	15.00	-	-
53	Plan Notes	Water	56.0			M Gal.	150.00	-	-
54	Plan Notes	Recycled Asphalt Surfacing	86			C.Y.	25.00	-	-
55	Plan Notes	Obliterate Existing Pavement Painting	5,728			S.F.	2.00	-	-
56	Plan Notes	CC-45 Cable Concrete Mat with Geotextile Fabric	23,380			S.F.	16.00	-	-
57	Plan Notes	Geogrid	2,600			S.Y.	5.00	-	-
58	Plan Notes	Biorolls	60			L.F.	5.00	-	-

Airport Name Bismarck Airport
 Location Bismarck, North Dakota
 AIP Project # 3-38-0003-0062-2020, 3-38-0003-0064-2020
 Contractor KLE Construction, LLC

Change Order No. 3
 Section 2

KLJ Project # 1805-02200.3
 Owner's Project # APG.AIP62.CONST, APG.AIP64.CONST

Item #	Spec #	Item	Quantities			Unit	Unit Price	Revised Cost	Changed Cost	
			Planned	Revised	Change					
59	Plan Notes	Inlet Protection in Graded Areas	15			Each	400.00	-	-	
60	Plan Notes	Air Pollution and Dust Control Agent	2.00			Acre	1,500.00	-	-	
61	Plan Notes	Remove and Salvage 8-Ft. Chain-Link Fence	100			L.F.	20.00	-	-	
62	Plan Notes	Remove and Dispose of Barbed Wire Fence	100			L.F.	5.00	-	-	
63	Local	Traffic Control	1			L.S.	120,000.00	-	-	
64	Local	Install Construction Safety Fence	19,000			L.F.	2.00	-	-	
65	Local	Remove Construction Safety Fence	19,000			L.F.	2.00	-	-	
66	Local	Dewatering	1			L.S.	385,000.00	-	-	
67	Local	Utility Pothole	75			Each	500.00	-	-	
68	C-105	Engineer/RPR field office	1			L.S.	20,000.00	-	-	
69	C-105	Mobilization	1			L.S.	750,000.00	-	-	
TOTAL SCHEDULE 1, DIVISION 1, BASE BID - AIP 062								\$	-	\$
AIP GRANT 064										
Schedule 1, Division 1, Base Bid - Subsurface Storm Drain Improvements from Runway 13-31 to Yegen Road Including Stormwater Lift Station, Concrete Headwall with Slide Gates, Microtunneling, and Pilot Tube Auger Boring; Storm Drain improvements from Yegen Road to Apple Creek Outfall including Grading, Cable Concrete System, Underdrains, Sheet Pile Wall, and Pilot Tube Auger Boring.										
14	D-701	42-Inch Reinforced Concrete Pipe, Cl. V (<12' Deep)	287			L.F.	\$ 485.00	\$ -	\$ -	
19	D-701	42-Inch Reinforced Concrete End Section	1			Each	4,500.00	-	-	
46	33 4924	Lift Station	1			L.S.	1,700,000.00	-	-	
51	BIS-901	Insulate Waterline	150			L.F.	25.00	-	-	
TOTAL SCHEDULE 1, DIVISION 1, BASE BID - AIP 064								\$	-	\$
AIP GRANT 064										
Schedule 1, Division 1, Base Bid, Option 2 - Triple Wall Polypropylene Storm Trunk Line										
1	D-701	36-Inch PP Pipe, Triple Wall Polypropylene	294			L.F.	\$ 195.00	\$ -	\$ -	
2	D-701	42-Inch PP Pipe, Triple Wall Polypropylene (Installed within Steel Casing)	992			L.F.	250.00	-	-	
3	D-701	42-Inch PP Pipe, Triple Wall Polypropylene (<12' Deep to SDMH-10)	878			L.F.	225.00	-	-	
4	D-701	42-Inch PP Pipe, Triple Wall Polypropylene (12'-22' Deep from SDMH-10 to Inlet 1)	2,641			L.F.	265.00	-	-	
5	D-701	42-Inch PP Pipe, Triple Wall Polypropylene (18'-33' Deep from	438			L.F.	300.00	-	-	
6	C-105	Mobilization	1			L.S.	140,000.00	-	-	
TOTAL SCHEDULE 1, DIVISION 1, BASE BID, OPTION 2 - AIP 064								\$	-	\$
AIP GRANT 064										
Schedule 1, Division 2, Additive Alternate A1 - Grading from Runway 3-21 to Yegen Road										
1	P-101	Remove and Dispose of Existing Reinforced Concrete Pipe (All Sizes)	12			L.F.	\$ 25.00	\$ -	\$ -	
2	P-152	Unclassified Excavation	95,142			C.Y.	9.00	-	-	
3	D-701	30-Inch Reinforced Concrete Pipe, Cl. V	335			L.F.	195.00	-	-	
4	D-701	30-Inch Reinforced Concrete End Section with Trash Guard	2			Each	2,800.00	-	-	
5	T-901	Seeding (#4 Native Warm-Season Tallgrass)	39.40			Acre	650.00	-	-	
6	T-901	Seeding (#5 Midgrass/Shortgrass)	10.60			Acre	650.00	-	-	
7	T-905	Topsoiling	31,033			C.Y.	4.00	-	-	
8	T-908	Mulching	50.00			Acre	2,800.00	-	-	
9	Plan Notes	Borrow (On-Site)	3,808			C.Y.	15.00	-	-	
10	Plan Notes	Water	990.0			M Gal.	150.00	-	-	
11	Plan Notes	Biorolls	180			L.F.	5.00	-	-	
12	Local	Mobilization	1			L.S.	140,000.00	-	-	
TOTAL SCHEDULE 1, DIVISION 1, ADDITIVE ALTERNATE A1 - AIP 064								\$	-	\$
AIP GRANT 062										
CHANGE ORDER #1										
CO 1-1	D-751	108-Inch Storm Drain Inlet	1			Each	\$ 18,500.00	\$ -	\$ -	
TOTAL CHANGE ORDER #1 - AIP 062								\$	-	\$
AIP GRANT 064										
CHANGE ORDER #2										
CO 2-1	33 4924	Lift Station Sump Pump Outlet Pipe Relocation	1			LS.	\$ 6,038.71	\$ -	\$ -	
TOTAL CHANGE ORDER #2 - AIP 064								\$	-	\$

Airport Name Bismarck Airport
 Location Bismarck, North Dakota
 AIP Project # 3-38-0003-0062-2020, 3-38-0003-0064-2020
 Contractor KLE Construction, LLC

Change Order No. 3
 Section 2

KLJ Project # 1805-02200.3
 Owner's Project # APG.AIP62.CONST, APG.AIP64.CONST

Item #	Spec #	Item	Quantities			Unit	Unit Price	Revised Cost	Changed Cost	
			Planned	Revised	Change					
AIP GRANT 062										
CHANGE ORDER #3										
CO 3-1	33 05 24	Horizontal Inclinometer Elimination	-	1	1	Each	\$ (33,213.35)	\$ (33,213.35)	\$ (33,213.35)	
								TOTAL CHANGE ORDER #3 - AIP 062	\$ (33,213.35)	\$ (33,213.35)
								TOTAL AIP 062	\$ (33,213.35)	\$ (33,213.35)
								TOTAL AIP 064	\$ -	\$ -
								TOTAL CHANGE	\$ (33,213.35)	\$ (33,213.35)

NOTE: The items highlighted above in orange are Items that are funded under AIP Grant 062.

NOTE: The items highlighted above in blue are items that are funded under AIP Grant 064.

Explanation of Changes

Airport Name	Bismarck Airport	Change Order No.	3
Location	Bismarck, North Dakota	Section	3
AIP Project #	3-38-0003-0062-2020, 3-38-0003-0064-2020	KLJ Project #	1805-02200.3
Contractor	KLE Construction, LLC	Owner's Project #	APG.AIP62.CONST, APG.AIP64.CONST

Item No. CO3-1

Description
Horizontal Inclinometer Elimination

Reason for Change

The Contractor has requested elimination of the horizontal inclinometers below active pavements. This is acceptable, however, a Ground Movement Monitoring Plan must be formally submitted, approved, and implemented in accordance with the requirements of Section 33 05 4, Section 1.05 N and Section 33 05 7, Section 1.05 M. Further, per the Agreement Between Owner and Contractor, Article 3, Contract Time, no microtunneling shall be allowed within 20 feet of the Runway 13-31 pavement section until the microtunneling and pilot tube auger boring for Runway 3-21 have been completed and accepted, including the ten (10) calendar day settlement monitoring per the approved Ground Movement Monitoring Plan. All paved surfaces shall be monitored per Sections 33 05 4 and 33 05 7 for an additional ten (10) calendar days after completion of trenchless storm installation activities to verify the absence of settlement. All paved surfaces shall be monitored again within ten (10) calendar days prior to Final Inspection per the approved Ground Movement Monitoring Plan to verify the absence of settlement. Further, a ground penetrating radar (GPR) survey shall be completed following the trenchless installations for detection of voids below existing pavements.

The Contractor shall also meet the following survey requirements: Centerline monitoring points shall be placed at a spacing of 25 feet along each microtunnel alignment. Monitoring points shall also be placed every 10 feet along the centerline with offsets of 15 feet and 30 feet to either side of centerline and at a spacing of 25 feet along the alignment. These monitoring points shall be surveyed every 4 hours while actively tunneling. Monitoring will also take place each day before boring/tunneling. While actively tunneling, the points that are 50 feet in front and 50 feet behind shall be monitored to ensure no settlement or movement is occurring due to these activities. Daily readings of surface monitoring points and inclinometers shall be continued until ground movements are less than 0.02 feet per day. Points, laser survey and inclinometers shall be monitored to the specified accuracy of 0.01 referenced to a benchmark located at least 125 feet from the shafts or microtunnel alignment. Nails shall not be utilized in the pavement surfaces.

The proposed cost appears to be allowable, allocable and reasonable.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 Brad 0700-1530 Krystal 1030-1900 William OFF Alicia 2130-0600 Sheriden 2230-0700	2 Brad 0700-1530 Krystal 1030-1900 William 1400-2230 Alicia OFF Sheriden 2230-0700	3 Brad 0700-1530 Krystal OFF William 1400-2230 Alicia OFF Sheriden 2230-0700	4 Brad 0700-1530 Krystal OFF William 1400-2230 Alicia 2130-0600 Sheriden 2230-0700	5 Krystal 0700-1530 William 1400-2230 Alicia 2130-0600
6 Krystal 0700-1530 William 1400-2230 Alicia 2130-0600	7 Brad 0700-1530 Krystal 1030-1900 William OFF Alicia 2130-0600 Sheriden 2230-0700	8 Brad 0700-1530 Krystal 1030-1900 William OFF Alicia 2130-0600 Sheriden 2230-0700	9 Brad 0700-1530 Krystal 1030-1900 William 1400-2230 Alicia OFF Sheriden 2230-0700	10 Brad 0700-1530 Krystal OFF William 1400-2230 Alicia OFF Sheriden 2230-0700	11 Brad 0700-1530 Krystal OFF William 1400-2230 Alicia 2130-0600 Sheriden 2230-0700	12 Krystal 0700-1530 William 1400-2230 Alicia 2130-0600
13 Krystal 0700-1530 William 1400-2230 Alicia 2130-0600	14 Brad 0700-1530 Krystal 1030-1900 William OFF Alicia 2130-0600 Sheriden 2230-0700	15 Brad 0700-1530 Krystal 1030-1900 William OFF Alicia 2130-0600 Sheriden 2230-0700	16 Brad 0700-1530 Krystal 1030-1900 William 1400-2230 Alicia OFF Sheriden 2230-0700	17 Brad Vacation Krystal OFF William 0700-1530 Alicia OFF Sheriden 2230-0700	18 Brad Vacation Krystal OFF William 0700-1530 Alicia 2130-0600 Sheriden 2230-0700	19 Krystal 0700-1530 William 1400-2230 Alicia 2130-0600
20 Krystal 0700-1530 William 1400-2230 Alicia 2130-0600	21 Brad Vacation Krystal 0700-1530 William OFF Alicia 2130-0600 Sheriden 2230-0700	22 Brad 0700-1530 Krystal 1030-1900 William OFF Alicia 2130-0600 William 2230-0700	23 Brad 0700-1530 Krystal 1030-1900 William 1400-2230 Alicia OFF Sheriden 2230-0700	24 Brad 0700-1530 Krystal OFF William 1400-2230 Alicia OFF Sheriden 2230-0700	25 Brad 0700-1530 Krystal OFF William 1400-2230 Alicia 2130-0600 Sheriden 2230-0700	26 Krystal 0700-1530 William 1400-2230 Alicia 2130-0600
27 Krystal 0700-1530 William 1400-2230 Alicia 2130-0600	28 Brad 0700-1530 Krystal 1030-1900 William OFF Alicia 2130-0600 Sheriden 2230-0700	29 Brad 0700-1530 Krystal Vacation William OFF Alicia 2130-0600 Sheriden 2230-0700	30 Brad 0700-1530 Krystal Vacation William 1400-2230 Alicia OFF Sheriden 2230-0700		This schedule is subject to change	Revised June 7, 2021