

Council Action:	
Approved: <input checked="" type="checkbox"/>	Denied: <input type="checkbox"/>
Date of Action: 11/25/19	
Verified by: <i>James Cook</i>	

**CITY COUNCIL ACTION MEMORANDUM**

**AM No. 19-50: Contract Amendment To Big Dipper Construction In The Amount Of \$113,968 For The Wasilla Library Parking Lot Expansion Project.**

Originator: Public Works Director  
 Date: November 6, 2019

Agenda of: November 25, 2019

Route to:	Department Head	Signature	Date
X	Public Works Director	<i>[Signature]</i>	11/6/19
X	Finance Director	<i>[Signature]</i>	11.6.19
X	Deputy Administrator	<i>[Signature]</i>	11/6/19
X	City Clerk	<i>[Signature]</i>	11/7/19

Reviewed by Mayor Bert L. Cottle: *[Signature]* 11/13/2019

**Fiscal Impact:**  yes or  no      **Funds Available:**  yes \$113,968

**Account name/number:** New Library/110-4550-455.45-03  
**Attachments:** Proposed Change Order No. 2 (9 pages)

**Summary Statement:** This contract amendment is proposed to address poor soil conditions encountered as the project began. The project was designed with expected good soils conditions that were found while building the library. The soil conditions changed in this portion of the site. A significant amount of addition excavation and fill is needed to support the new parking lot.

The original contract was awarded to Big Dipper Construction on August 26, 2019 through Action Memorandum No. 19-34 in the amount of \$296,714 for the Wasilla Library Parking Lot Expansion Project. An initial change order was executed due to revised landscaping plans that did not add cost to the project. Change Order No. 2 adds to the original contract to address changed conditions.

**Staff Recommendation:** Approve contract amendment to Big Dipper Construction in the amount of \$113,968 for the Wasilla Library Parking Lot Expansion Project.



# Change Order

No. 002

Date of Issuance: 10/29/2019

Effective Date: 10/29/2019

<b>Project:</b> Wasilla Public Library Parking Lot Expansion	<b>Owner:</b> City of Wasilla	<b>Owner Contact:</b> Archie Giddings
<b>Contractor:</b> Big Dipper Construction, Inc.		<b>Contractor Contact:</b> Jeremy Pepperd
<b>Contractor Address:</b> E. Railroad Ave., Wasilla, AK 99654		<b>Project No.:</b> OR 18-062/IM 18-098

**The Contract Documents are modified as follows upon execution of this Change Order:**

Increase pavement structural section as shown in revised sheet C2.20 of plans. Change pay unit of Unusable Excavation and Structural Fill from Cubic Yards and Tons, respectively, to Lump Sum. Add pay item for Geotextile Fabric (Separation, Stabilization), paid by Lump Sum.

**Attachments (list documents supporting change):**

- Wasilla Public Library Parking Lot Expansion Geotechnical Recommendations (dated 10/11/2019)
- Revised plan sheet C2.20
- Revised bid schedule
- Product Specifications for Mirafi RS380i geotextile
- Big Dipper Lump Sum Proposal
- Email (dated 10/21/19) postponing work until Spring 2020

**Reason for Change:**

A consistent 5- to 6-foot layer of peat was discovered in three test pits dug in the project area after clearing was completed. A geotechnical engineer visited the site and recommended over-excavation of the peat and the addition of geotextile to provide increased protection from settling and freeze/thaw movements. As a result, the excavation depth was increased by 16 inches to a minimum of 4 feet deep, or until no large organics are encountered. The structural fill layer was increased to a minimum of 44 inches and a geotextile that performs well as separation and stability was added to the bottom of excavation. Unit prices were converted to Lump Sum to simplify quantity tracking.

**CHANGE IN CONTRACT PRICE:**

**CHANGE IN CONTRACT TIMES:**

Original Contract Price:

\$296,713.51

No change in contract time.

Increase of this Change Order:

\$113,967.29 w/ \$10,806.02 contingency

Contract Price incorporating this Change Order:

\$430,680.80 w/ \$10,806.02 contingency

RECOMMENDED:

ACCEPTED:

ACCEPTED:

By:   
Engineer (Authorized Signature)

By: \_\_\_\_\_  
Owner (Authorized Signature)

By: \_\_\_\_\_  
Contractor (Authorized Signature)

Date: 10/29/19

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


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



# Memorandum

TO: Archie Giddings  
City of Wasilla, Public Works Director

THROUGH: Elizabeth Madison, P.E.  
Project Engineer

FROM: Anna Ferntheil, P.E.   
Geotechnical Engineer

DATE: October 11, 2019

SUBJECT: Wasilla Public Library Parking Lot Expansion  
Geotechnical Recommendations  
Project Number 1122.63006.01

---

## Project Summary

The City of Wasilla plans to expand the parking area on the north side of the current Wasilla Library. The new Wasilla Library was constructed in 2015 and included the library structure and a parking lot. A geotechnical investigation was conducted by DOWL in 2014 to support the design of the new library. Three test borings were advanced within or near the building footprint and five test borings were advanced in the parking area. All test borings from the 2014 investigation indicate silty sand with small amounts of plant matter over dense sand and gravel over glacial till.

The nearest test boring to the proposed parking expansion is Test Boring 1, located approximately 150 feet south of the southern edge of the proposed parking lot expansion. General geotechnical data from the site investigation in 2014 was used to develop the design for the parking lot expansion.

Upon breaking ground for construction of the parking lot expansion in October 2019, the contractor encountered peat within the excavation limits of the parking lot expansion and notified DOWL of the discrepancy from anticipated conditions.

Site Investigation. On October 4, 2019, DOWL engineers Elizabeth Madison, P.E. and Anna Ferntheil, P.E. conducted a visit on October 4, 2019 to observe the site conditions and meet with Jeremy Pepperd and Todd Minnick representatives of Big Dipper Construction. The contractor provided a backhoe and operator to excavate four test pits across the site to characterize the peat depths. The test pit locations and logs are attached (Figures 1 through 5).

## Site Conditions

Surface. At the time of the investigation, the surface had been cleared of brush and trees. Six inches of standing water was present in the northwest corner of the parking lot. Standing water was present to depths of 6 to 12 inches along the entire western border of the site; more than 12 inches of water had ponded in the northwest corner of the property. Approximate extents of the pooled water at the time of the site visit is shown on the attached test pit location map (Figure 1). Photos of the pooling are also attached.

# MEMORANDUM

Subsurface. Based on the test pits, subsurface conditions are generally uniform within the proposed parking lot expansion. A six-inch-thick organic mat over two to four feet of fill material was observed in each of the test pits; the fill material classifies as silty sand with gravel. Below the fill material, four to six feet of peat is present over gray nonplastic silt; organic debris consisting of trees and roots are present at the fill-peat boundary, indicating the fill was placed directly over the original organic mat. Water was observed seeping into the walls of the test pits, approximately 6 to 12 inches below the top of the peat layer.

## Geotechnical Recommendations

### Recommended Alternative

The existing fill and peat are not suitable for support of pavements. We recommend the peat be removed and replaced with properly placed and compacted backfill material.

Remove all peat to expose the underlying silt layer. Scarify and compact the bottom of the excavation prior to placing backfill. The existing surficial fill may be reused as backfill. A material meeting the State of Alaska Department of Transportation, Select Material Type C with the fines content limited to 20% passing the number 200 sieve may be used to backfill the excavation up to the bottom of the following recommended structural section:

- 2 inches of asphalt pavement over
- 2 inches of D1 leveling course over
- 28 inches of DOT&PF Select Material, Type A

**Alternative 1** If a full earthwork solution is not desired, a partial excavation of the peat is feasible if the partial excavation is completed and backfill/surcharge material is placed this fall, prior to freezing. The surcharge should remain in place over the winter months until construction starts again in the spring. Peat settlement is inherently variable and difficult to predict, therefore, ongoing differential settlement resulting in pavement damage is likely.

If the partial excavation alternative is selected, overexcavate the peat and fill to at least 4 feet below final grade. If any large (greater than ½ inch in diameter) organic matter is encountered at the bottom of the excavation, continue to excavate until all large organic matter has been removed.

A separation and structural geotextile, such as Mirafi 380i or equivalent, shall be placed at the bottom of the excavation. Backfill and build up to the grade using a material meeting the State of Alaska, Select Material Type C with the fines content limited to 20% passing the number 200 sieve. The existing fill on the site would be acceptable for re-use in this application.

A surcharge of at least 4 feet of material would then be placed above the final grade as soon as possible and left in place until construction begins in the spring. To complete construction in the spring, remove the surcharge and prepare the final grade with the following structural section:

- 2 inches of asphalt pavement over
- 2 inches of D1 leveling course over
- 28 inches of DOT&PF Select Material, Type A

## Earthwork

# MEMORANDUM

---

Structural fill should be placed and compacted in lifts not exceeding twelve inches in loose thickness if a large vibratory compactor is used, or not exceeding six inches in loose thickness if a hand-operated compactor is used. Each lift of structural fill should be compacted throughout its entire depth to a density of at least 95 percent of the maximum index density determined in accordance with ASTM D1557. All excavations should be completely dewatered before placement of structural fill.

## Dewatering

Groundwater was not observed in test pits, however, water seeped in at the top of the peat layer and pooled in the base of the test pits. If the weather is wet and surface water is pooled on the site, dewatering will be necessary during the excavation. The contractor is responsible for determining dewatering methods and obtaining needed permits to discharge water.

## Discussion

The recommended alternative will result in a well-draining, stable structural base. The recommended alternative will cost more due to a deeper excavation, more imported fill, and more waste disposal but will save time as the site can be brought up to the D-1 grade this season if weather permits.

If Alternative 1 (partial overexcavation) is selected, continued maintenance in the form of crack sealing, filling potholes, and addressing other pavement distresses should be anticipated for the lifetime of this pavement. Additionally, you should expect a reduced pavement lifespan of less than 10 years.

There is no precise method to predict the amount or rate of settlement in peat. Peat depths, moisture content, and composition are typically variable across a site and, as a result, the amount of settlement that occurs is not consistent. Typically, initial settlement occurs within the first year after fill has been placed and secondary settlement can continue for decades.

**Drainage Concerns.** We observed significant ponding on the site. The water appears to be surficial as groundwater was not encountered in the test pits. However, water does appear to be infiltrating through the fill and into the top of the peat as observed from the seepage in all four test pits (see photos). If water ponding on the site is not addressed, water movement through the fill may contribute to frost-related issues as frost depth in the area will penetrate through the fill and into the peat layer. Excess water within the fill will contribute to damage to the pavement in seasonal freeze-thaw cycles.

To minimize potential frost issues, the retention basin should be designed to keep water levels below the gravel fill level if Alternative 1 is selected.

If you have any questions regarding this report or its use, or if we may provide additional services, please call.

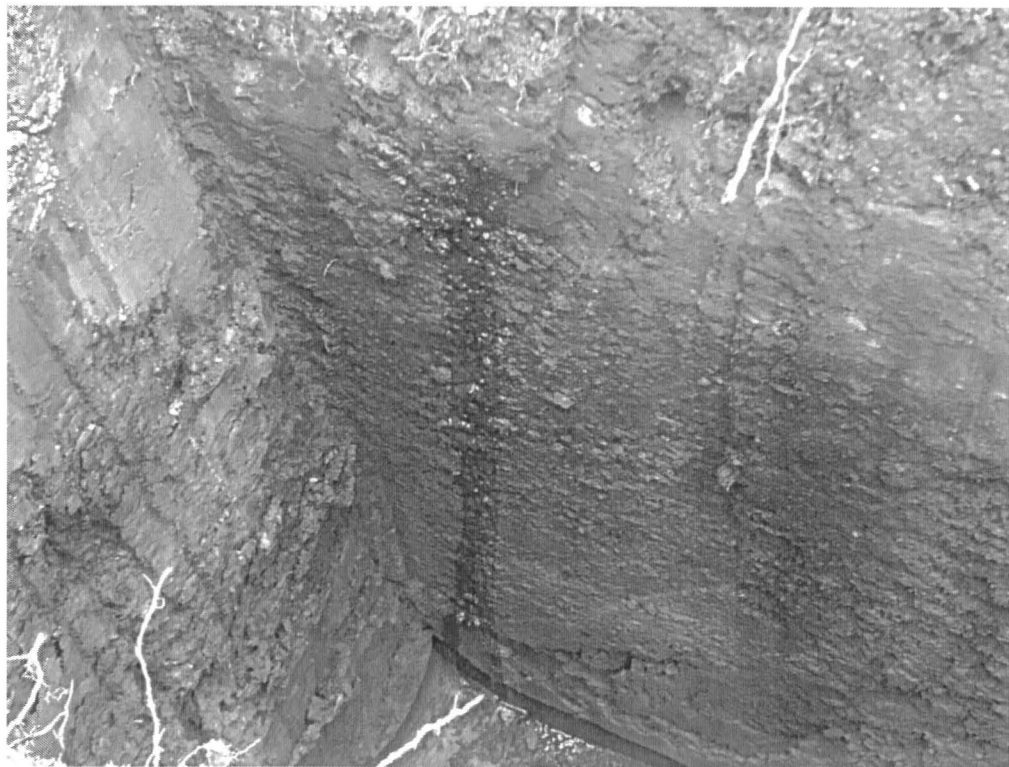
## Attachments:

- Photo Log
- Figure 1: Test Pit Location Map
- Figures 2 through 5: Test Pit Logs

# Photo Log



Excavator and ponding in NW of lot



Water seeping from top of peat

## PHOTO LOG



Water ponded along western border of site



Water ponded in northwest corner of existing parking lot.



Water ponded in northwest of parking lot



Typical soil profile for test pits; fill over peat over silt





Typical soil on the parking expansion site: silt on bottom left, peat on top, fill material on bottom right



Large organics present at top of peat layer

