SUBJECT: Consideration of approval of Change Order No. 3 to Anglin Civil, LLC, for the ITC Trail – Phase 2 project in the amount of $430,877.

SUBMITTING DEPARTMENT: Department of Public Works, Engineering Division
Parks, Recreation and Cultural Services Department

CITY MANAGER APPROVAL:

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<th>EXPENDITURE REQUIRED</th>
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<td>AMOUNT BUDGETED</td>
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BACKGROUND INFORMATION:

A north-south regional pathway in the western portion of the city, known as the ITC Corridor Regional Trail, was included in the adopted City of Novi Non-Motorized Master Plan 2011. The regional pathway will provide a connection between the ITC Community Sports Park and Maybury State Park to the south and the City of Wixom to the north.

Phase 2 will complete the ITC Corridor Regional Trail by continuing the path north from the intersection of 9 Mile Road and Garfield Road to 11 Mile Road (just east of Wixom Road) which. The majority of this trail will be located within the ITC transmission corridor.

Several sections of this trail are being constructed through Michigan Department of Environment, Great Lakes, and Energy (MDEGLE, fka MDEQ) regulated wetlands, which required minimal permitted impacts. The MDEGLE permit was approved with the use of boardwalks in lieu of stone base and hard paved pathway surfaces. The City enlisted the expertise of City geotechnical engineer TEC to provide soil borings throughout the wetland portions to determine adequate depths of bearing soils capable of handling the conservative loading for a boardwalk.

Upon receiving the geotechnical investigation report, the City’s consulting engineer, AECOM-Great Lakes designed a suitable boardwalk with a foundation of helical piers. A helical pier is a foundation pin made of steel that contains helices just like screws. The piers are driven into the soil to depths below the frost line by use of a hydraulic system. Helical piers are used to support structures especially where soil conditions are challenging, making it hard to set up a traditional foundation system. Instead of expensive large excavations, they thread deep into the ground. They are also used to repair existing foundations that have problems such as cracks or are weak. Helical piers minimize time spent installing a foundation, causes little disturbance to the soil and transfers the weight of the structure, to soils deep into the earth that would bear the load.
The geotechnical report recommended helical pier depth averaging at about 15-feet to reach suitable bearing strength soils. During the construction installation, it became apparent several wetland areas of the large boardwalk (1,975-feet in length) between 9 and 10 Mile Roads were not hitting sufficient bearing capacity until almost 70-feet. The contract pay item for helical piers was set up to pay "each" pier as a 20-foot length. As additional depth was needed, another pay item was created for each additional 5-foot section. Therefore, at $575 per additional 5-foot pier section, the extra costs increased significantly.

These additional costs will ensure that this boardwalk will hold up over time and not settle through Michigan’s harsh freeze/thaw cycles. A number of existing boardwalks throughout the city have failed due to not driving the foundations to a suitable depth.

Also, included with this change order is a modification of the connection method of the top cap board to the handrail. In the past, this handrail cap was affixed using simple screws, which were breaking or backing out with the expansion/contraction of the boards; therefore, the City directed the contractor to assemble the handrail cap using carriage bolts at every 2 to 2 ½ feet.

This change order is in addition to the two previous approved change orders as outlined below:

Change Order No. 1 - $8,357.40 – To remove an existing garden and shed located within the ITC Corridor easement and to make minor modifications or add several culverts to alleviate drainage concerns.

Change Order No. 2 - $68,828.50 – To account for a new drainage network and pathway alignment on the north-side of 9 Mile Road, along the Cambridge Homes development, Terra. Of which, most of this change order is offset by funds collected from Cambridge Homes.

**RECOMMENDED ACTION:** Approval of Change Order No. 3 to Anglin Civil, LLC, for the ITC Trail – Phase 2 project in the amount of $430,877.00.
ITC Corridor Regional Trail
Alignment and Project Status

Map Legend
- Trailhead
- Trail Complete
- Trail Under Construction
- Existing Parkland
- Conservation Easement

ITC Trail - Phase 3B
Completed in Fall 2016.

ITC Trail - Phase 3A
Completed in 2013.

9 Mile to 11 Mile Phase
Under Construction
Fall 2018-Spring 2019.

ITC Trail - Phase 1A
Completed in 2016.

ITC CSP Trail
Completed in 2017.

Maybury Connector
Constructed in 2013.

City of Novi
Integrated Solutions Team
Geospatial Resources Division
45175 Ten Mile Rd
Novi, MI 48375
cityofnovi.org

Map Author: Keri Blough
Date: September 10, 2018
Project: ITC Corridor Regional Trail
Version #: 5.1

Map Interpretation Notice:
Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi.

Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 120 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.
ITC Corridor Regional Trail - Phase 2
Location Map

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.

Map Author: Joseph Akers
Date: July 23, 2018
Project: ITC Corridor Regional Trail - Phase 2
Version: 1

Amended By:
Date:
Department:

MAP INTERPRETATION NOTICE
Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.

City of Novi
Engineering Division
Department of Public Services
26300 Lee Begaie Drive
Novi, MI 48375
cityofnovi.org
NOTE: Silt fencing shall be installed at locations determined by the engineer.

DATA SEE SHEETS 6, 7 AND 12 FOR BENCHMARK & CONTROL PTS.

BY THE ENGINEER. REMOVE TREES OR BRANCHES AS NEEDED TO MAINTAIN A MINIMUM OF 2' CLEAR ON BOTH SIDES OF TRAIL.

NOTE: CLEAR BRUSH, DEBRIS AND DOWNED TREE MATERIAL AS DESCRIBED IN THE PATHWAY GRADING SPEC AND AS DIRECTED BY THE ENGINEER. MAINTAIN A MINIMUM OF 2' CLEAR ABOVE GROUND.

OVERHEAD WIRES

CAUTION

OFSET 28.6' ITC EA SEMENT

NOTE: SILT FENCING SHALL BE INSTALLED

AT LOCATIONS DETERMINED BY THE ENGINEER.

DATA SEE SHEETS 6, 7 AND 12 FOR BENCHMARK & CONTROL PTS.

OVERHEAD WIRES

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OVERHEAD WIRES

CAUTION
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This document hereby renders changes in the Work, changes in the Contract
Time and changes in the Contract Price by adding, deducting and/or balancing individual Contract line items through a signed authorization of
the Prime Contractor, Owner, and Engineer.

Reasoning:
The increase in this change order is due to the additional depth of helical piles needed to construct the boardwalks on the ITC trail. Geotechnical investigation was completed, and in many areas the estimated depths matched what was expected from the geotechnical report, however, the soils were very inconsistent and in order to achieve the required bearing strength, significant extra depth was needed on many of the piles. Piles ranged from 10 feet in the ground to 70 feet in the ground, which shows the inconsistency in the unknown subsurface soils. The additional money is required to ensure that the boardwalk will hold up over time and not settle through our freeze thaw cycles. A number of the boardwalks that have failed throughout the city were caused by not driving the foundation to a suitable depth.

Also adding a segment of 36 inch pipe that was not accounted for in the prior work change for the drainage elements at the intersection of 9 Mile Road and Garfield. Additionally, adding a change to affix the hundred cap of the boardwalk with carriage bolts as opposed to screws. The normal expansion/contraction of the boards on many boardwalks through the city do so with enough force to break screws - it has been found that carriage bolts hold better. This added work will require approximately 2 crew days.

EXISTING CONTRACT ITEMS

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Subtotals $479,975.00  $56,898.00
Total $423,077.00
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Subtotals: $7,800.00  $0.00

Total: $7,800.00  

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**THE CHANGES ADDRESSED BY THIS CHANGE ORDER HEREBY ADJUSTS THE CONTRACT TIME BY:**

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**Increase/Decrease in Contract Price:**

- $430,877.00

**Original Contract Amount:**

- $2,258,147.05

**Sum of Previous Approved Change Orders:**

- $77,239.90

**Revised Contract Amount:**

- $2,766,263.95

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**Approved By:**

- Jeffrey Muck, Parks & Recreation Director
- Sue Morianti, Purchasing Manager

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**Prepared By:**

- AECOM-Great Lakes

**Reviewed By:**

- Aaron J. Staup, Construction Engineer

**Accepted By:**

- Anglin Civil, LLC

**Approved By:**

- Jeffrey Muck, Parks & Recreation Director
- Sue Morianti, Purchasing Manager