



MEMORANDUM

TO: Daniel Plath, Indiana Dunes National Park, daniel_plath@nps.gov
Daniel Mason, Indiana Dunes National Park, daniel.mason@nps.gov
Agustin Perez-Maldonado, Indiana Dunes National Park, Agustin_perezmalonado@nps.gov

FROM: Nicole Barker, Double Track Northwest Indiana Project Manager, nicole.barker@nictd.com
Northern Indiana Commuter Transportation District (NICTD)

RE: Double Track NWI Culvert Modifications

A handwritten signature in cursive script that reads "Nicole Barker".

DATE: June 30, 2020

TRANSMITTED VIA EMAIL

The purpose of this memo is to follow-up to our February 11, 2020 meeting regarding Double Track culvert modifications near the Indiana Dunes National Park.

Shortly after the meeting, our design team sent you the detailed modeling report as requested.

Our team promised to follow up as the designs progress to the 60% level with an updated map, plans and spreadsheet. Ms. Karie Koehneke of Patrick Engineering, Inc provided these files to Agustin Perez-Maldonado on June 27, 2020 on behalf of NICTD. The files were uploaded to NPS's ftp site. A copy of that transmittal email is attached here. Please provide any comments on the proposed culvert work by Monday, July 13. Should we not receive a response by that date, we will assume you are comfortable with the plans as proposed. We understand that we will also need to apply for and obtain a Special Use Permit for this work.

As always, thank you for all you have done to help coordinate on this exciting project. We value your partnership. Should you have any questions, please let me know.

From: [Koehneke, Karie](#)
To: [Perez Maldonado, Agustin](#)
Cc: [Reid, Janice](#); [Nicole Barker](#); [Brianna Evans](#); [Greg Lorenzi](#); [donald.yetter](#); [Coate, Russell](#); [Kutscher, Kristine](#); [Campbell, Glen](#); [Feinstein, Joel](#)
Subject: DT - NPS Impacts Submittal and Culvert Plans
Date: Saturday, June 27, 2020 7:59:57 AM
Attachments: [DT_Culvert_Matrix_2020-06-23_ForNPS.pdf](#)

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Agustin,

I have uploaded the latest Culvert plans with temporary impacts noted to your FTP site.

There are fifteen (15) small culverts and five (5) large structural culverts within the project limits being designed by Patrick Engineering (Patrick), a subcontractor to AECOM on the NICTD Double Track project located in northwest Indiana from Michigan City to Gary. The plans and tables herein are for information only and may be adjusted/modified as the design progresses. The basic information (i.e. structure type, size, and location) was taken from the Basis of Design Report Drainage Analysis (BODR Drainage) by HDR dated March 17, 2017. The attached spreadsheet lists all the project culverts. The gray highlighted culverts have no change and subsequently were not analyzed. Moreover, the lengths of the small culverts were taken from the BODR Drainage; where additional length is noted, beyond the existing culvert, is assumed to be added to the south side where the additional track is proposed.

During the Preliminary (30%) Design Phase, nearly all the small culverts were envisioned to be installed by jack and bore method. The notable exception is the culvert located near MP 35.98, which runs parallel to the tracks, and is the only culvert that does not cross under the tracks. Trenchless installation methods (e.g. jack and bore) are typically more expensive than traditional open cut/cut and cover methods. Therefore, NICTD has agreed that the track can be temporarily removed from service, in order to install the culverts by open cut/cut and cover method. Consequently, all of the small crossing culverts have been relocated to better align with the existing culvert alignment; thus, reducing the amount of ditch grading required to align the streams/ditches into the crossing culverts. Please be advised that Patrick is currently in the process of incorporating the existing ditch survey/profile into the cross section view. Therefore, future exhibits will help better/more accurately depict the culvert embedment and final grading limits.

Each culvert is assumed to need riprap to provide erosion and sediment control as the water enters and leaves the culverts. The amount of riprap was calculated in accordance with the US Department of Transportation Federal Highway Administration (FHWA) Hydraulic Engineering Circular No. 14 titled Hydraulic Design of Energy Dissipaters for Culverts and Channels. Using information from the BODR Drainage planning document Patrick estimated flow rates using the 100-year return period.

The fifteen (15) small culverts are each shown on a plan and profile sheet. The plan is rotated along the length of the culvert to align with the profile. The culvert invert elevations were taken from the BODR Drainage. In addition to the culverts and riprap protection, some grading will be required

around the culverts and areas that will need to be used for construction. Those areas may not be shown on the plans at this time; however, general grading limits can be assumed to be within approximately 20 feet of the edge of the riprap. These limits will be temporary in order to complete construction and align the ditch flow into the culvert(s). Lastly, it is anticipated that construction limits along the ditches parallel to the track will be modified to intersect the construction limits of the culverts.

Please reach out to us if you have any questions or concerns.

Thank you,

Karie E. Koehneke, P.E., Project Manager

Patrick Engineering Inc.

450 Vale Park Road, Suite F, Valparaiso, Indiana 46385

P 219.413.7105 | C 331.452.6502 | F 219.413.7101

kkoehneke@patrickco.com | www.patrickco.com