CRANSTON
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September 13, 2024

Hameed Malik, Ph.D., P.E.
Director of Engineering
Augusta Engineering Department
452 Walker St., Suite 110
Augusta, GA 30901

Re: National Hills – CSX Railroad
Culvert Replacement Alternatives
Augusta-Richmond County, Georgia
Cranston File No.: 2019-0333

Dear Dr. Malik:

In accordance with your request, we are pleased to offer the following proposal for the alternatives analysis associated with the replacement of railroad culverts immediately downstream of the National Hills neighborhood. As noted herein, Cranston recommended additional study of the three railroad culvert crossings downstream of the project area. Based on recent studies, the railroad culverts restrict downstream conveyance and contribute to flooding conditions in the National Hills area.

PROJECT AREA & BACKGROUND

The National Hills Drainage Study was commissioned to evaluate the existing stormwater collection and conveyance systems within the National Hills neighborhood in Augusta, Georgia given chronic flooding conditions throughout the National Hills area. Based on engineering studies and design services completed to-date, aged or non-existent stormwater collection and conveyance infrastructure, and restrictions within the downstream receiving system contribute to the flooding conditions. The area subject to this analysis is approximately 227 acres and is primarily comprised of residential properties. The area generally drains from south to north to three distinct outfalls, which are all located immediately upstream of CSX railroad tracks. The CSX tracks extend east-west and include culverts of varying diameter and material near the low-points.

During 2019-2020 Cranston completed field investigations and concept development services to identify priority areas for infrastructure improvements. Subsequent engineering services were completed from 2021-2023 for the design of

infrastructure improvements within the priority areas. These services included hydrologic and hydraulic modeling to further evaluate flood prone areas, existing closed-pipe system capacities, and other constraints to efficient and effective drainage throughout the priority areas. Cranston designed improvements that included new closed pipe systems and local street improvements such as pavement milling / replacement and new curb and gutter to improve drainage conditions. The proposed drainage improvements included routing the majority of runoff to the northern most outfall, noted as Outfall #1 in the April 10, 2023, *National Hills Drainage Design Report – Executive Summary,* by Cranston. While this provides the closest connection to the receiving stream of Rock Creek, the existing railroad culverts that lie downstream of National Hills serve as a restriction to effective stormwater conveyance and contribute to flooding conditions. As noted in the design report, Cranston recommended additional study of the CSX railroad culverts immediately downstream of the National Hills basin prior to implementing any improvements.

This proposal provides a scope of work, fee, and tentative schedule for professional engineering services associated with the development of conceptual culvert improvements along the CSX Railroad immediately downstream of the National Hills project area. Our services include engaging CSX Railroad and their consultant STV, Inc. during the alternatives analysis and pre-permit processes.

SCOPE OF WORK

We propose the following scope of work relating to the development of alternatives for culvert improvements along the CSX railroad immediately downstream of the National Hills Subdivision.

TASK 1: ALTERNATIVES ANALYSIS

- Cranston will initiate services by facilitating an on-site kick-off meeting to include the Augusta Engineering Department, CSX Railroad, and other stakeholders as identified.
- We will review the previously developed PCSWMM model to validate the calculated peak flow rates at the three (3) outfalls.
- Evaluate the CSX Railroad design criteria for culvert crossings.
- Using the HY-8 Culvert Hydraulic Analysis Program, by the Federal Highway Administration and other design tools as needed, Cranston will develop hydraulic model(s) of the existing railroad culvert crossings using the previously calculated proposed condition peak flows.
- We will meet with Augusta Engineering Department and CSX to review the existing conditions and preview the next steps in the alternatives analysis process.
- Cranston will develop proposed culvert improvement alternatives using the proposed condition peak flows using HY-8 and other design tools as necessary.
- We anticipate that our alternatives will include culverts of varying material and geometry meeting CSX railroad requirements.

DELIVERABLES

- Cranston will deliver a letter report identifying proposed culvert replacement alternatives, pros and cons of the options, and recommending a preferred alternative.
- The report will identify the permitting process and anticipated timeline to secure CSX approval of the proposed improvements.
- An opinion of probable construction cost.

ASSUMPTIONS & EXCLUSIONS

- Survey services are excluded for the purposes of this analysis. Cranston will utilize the basemap information previously compiled for the alternatives analysis.
- Geotechnical and/or environmental services are excluded.
- CSX Railroad engagement is anticipated in this scope of work. However, permitting of proposed improvements is not. We anticipate meetings with the railroad and Augusta Engineering Department to establish / confirm design criteria. Permitting of the selected alternatives will be provided in the final design services.
- Construction drawings and specifications for the proposed upgrades are not included.
- Easement acquisition, right-of-entry coordination, and any associated fees relating to railroad engagement are not included.
- Cranston will contact CSX for access prior to entering the CSX right-of-way.
- Any services not expressly included in this proposal are excluded. Additional services may be provided on a time and material basis or as a separate agreement upon request.

FEE PROPOSAL

The fee schedule proposed below is consistent with the approved Augusta Engineering Department Task Order rates.

TASK 1: ALTERNATIVES ANALYSIS	**Fee**
Project Lead: 10 hours @ $205/hour	$2,050
Project Manager: 24 hours @ $175/hour	$4,200
Senior Engineer, PE: 50 hours @ $165/hour	$8,250
Design Staff: 100 hours @ $150/hour	$15,000
TOTAL	**$29,500**

TIME OF COMPLETION

We will initiate services upon receipt of your notice to proceed. For planning purposes, we anticipate the alternatives analysis will require 8 weeks to complete.

We appreciate the opportunity to submit this proposal and trust that you find it satisfactory. Should you have any questions concerning this proposal, please do not hesitate to give us a call.

Sincerely,

CRANSTON, LLC

Tom Dunaway, PE, MBA
Design Group Manager