

US EPA ARCHIVE DOCUMENT

MEMORANDUM

DATE: June 7, 2012
TO: Ralph Dollhopf, United States Environmental Protection Agency
FROM: Christopher Haux, Enbridge Energy, Limited Partnership
Re: 2012 Morrow Lake Delta Containment Strategy – Proposed Alternative

1.0 INTRODUCTION

The purpose of this memorandum is to present an alternative containment strategy to the current boom deployment at E4 and the former E4.5 as described in the *Morrow Lake Monitoring, Assessment, and Management Plan* submitted to United States Environmental Protection Agency (U.S. EPA) on May 16, 2012. Upon completion of a proposed trial deployment and United States Environmental Protection Agency approval, this alternative will be implemented immediately.

2.0 OBJECTIVES

The objectives of this alternate containment strategy are as follows:

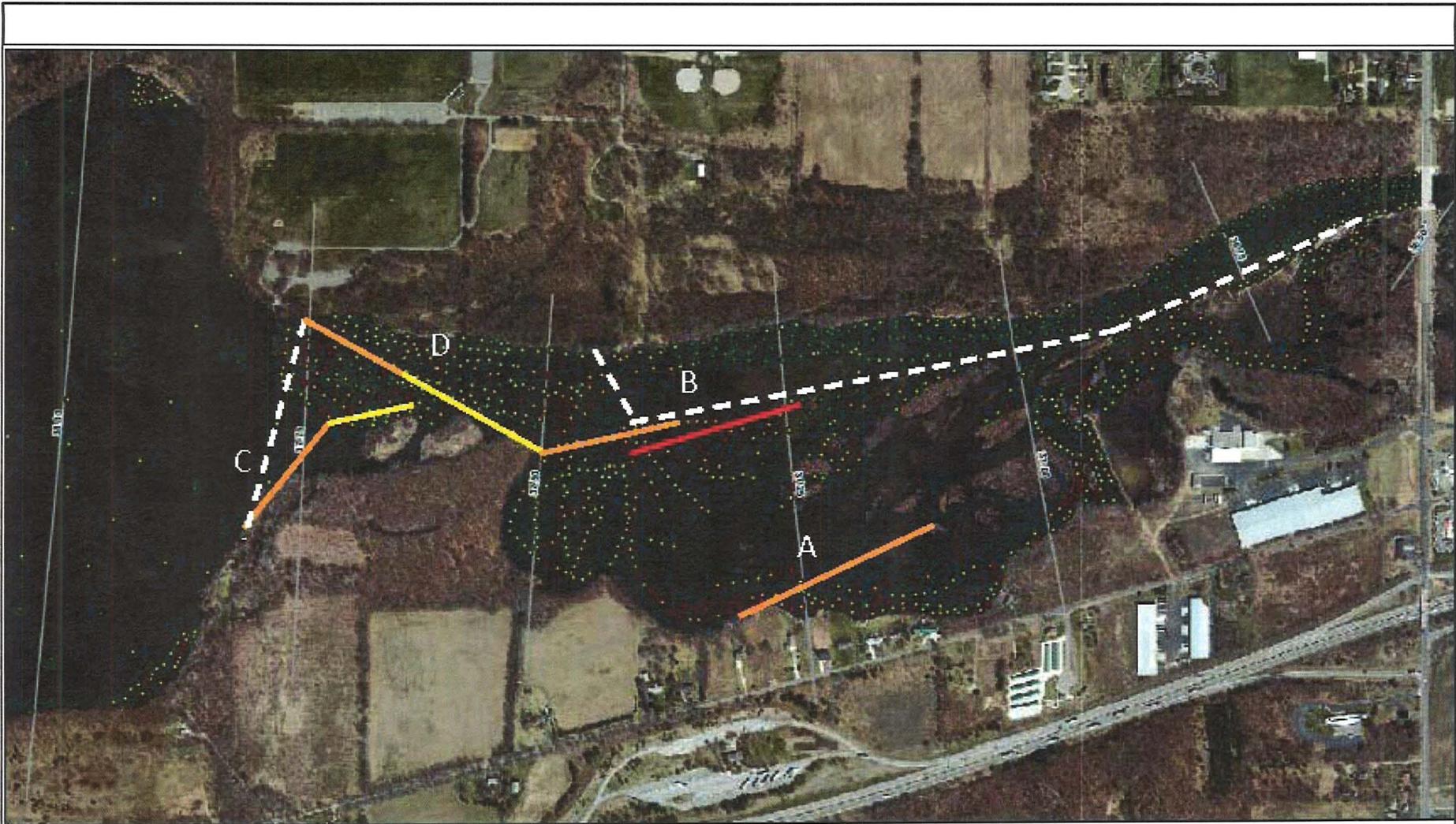
- Provide containment of residual oil in its current position within the delta,
- Provide containment with the ability to sustain a significant high water flow event, which will aid in the enhancement of Morrow Lake Delta and Fan,
- Provide containment that would minimize the potential of adverse conditions such as increased water velocities at the base of the water column,
- Create a more secure, stable, and potentially longer-term containment system using selected materials and configurations,
- Provide a containment system that will increase the depositional properties within the Morrow Lake Delta, and
- Allow for the continued closure of a smaller portion of the Morrow Lake Delta, which would potentially open both a canoe and boat launch for public use within the main channel of the delta and the boat launch for Morrow Lake.

3.0 STRATEGY

The proposed alternative containment strategy consists of the deployment of containment equipment at four separate geographic locations within the Morrow Lake Delta. The proposed alternative containment strategy placement detail sheet is presented in *Attachment A* as locations A, B, C, and D and further described below:

- Location A: This location will consist of 800 to 1,200 feet of 18-inch surface containment boom and Curtain 1 (see detail sheet in *Attachment A*), and an in-stream anchor (concrete or post style) and shoreline anchor (natural).
- Location B: The downstream section will consist of 800 to 1,000 feet of surface containment boom and Curtain 1, and an in-stream anchor (concrete or post style) and shoreline anchor (natural). The upstream section will consist of 600 to 800 feet of 18-inch surface containment boom and a full curtain from the base of the boom to the river bottom or Curtain 1, and two in-stream anchors (concrete or post style).
- Location C: The downstream section will consist of 400 to 800 feet of 18-inch surface containment boom and Curtain 1, and an in-stream (concrete or post style) and shoreline anchor (natural). The downstream section will consist of 200 to 400 feet of surface containment boom. A trial deployment of the strategy at this location will be necessary to ensure that the configuration will perform as anticipated. This configuration has not yet been attempted on this project.
- Location D: Removal of the full curtain from the existing configuration of the containment currently in place at location E4. Deployment of 200 to 600 feet of Curtain 1 at the downstream section. Additional deployment in-stream may be required.

Note that Curtain 1 currently includes the addition of pom-poms (18" spacing) within the top section of the "open area" (see detail sheet in *Attachment A – Curtain 1*). Field trials will be necessary to determine if this addition is practicable. Although not currently proposed as part of this containment strategy, Curtain 2 and Curtain 3 may be considered based upon the performance of Curtain 1. Therefore, details for Curtain 2 and Curtain 3 are also provided in *Attachment A*.



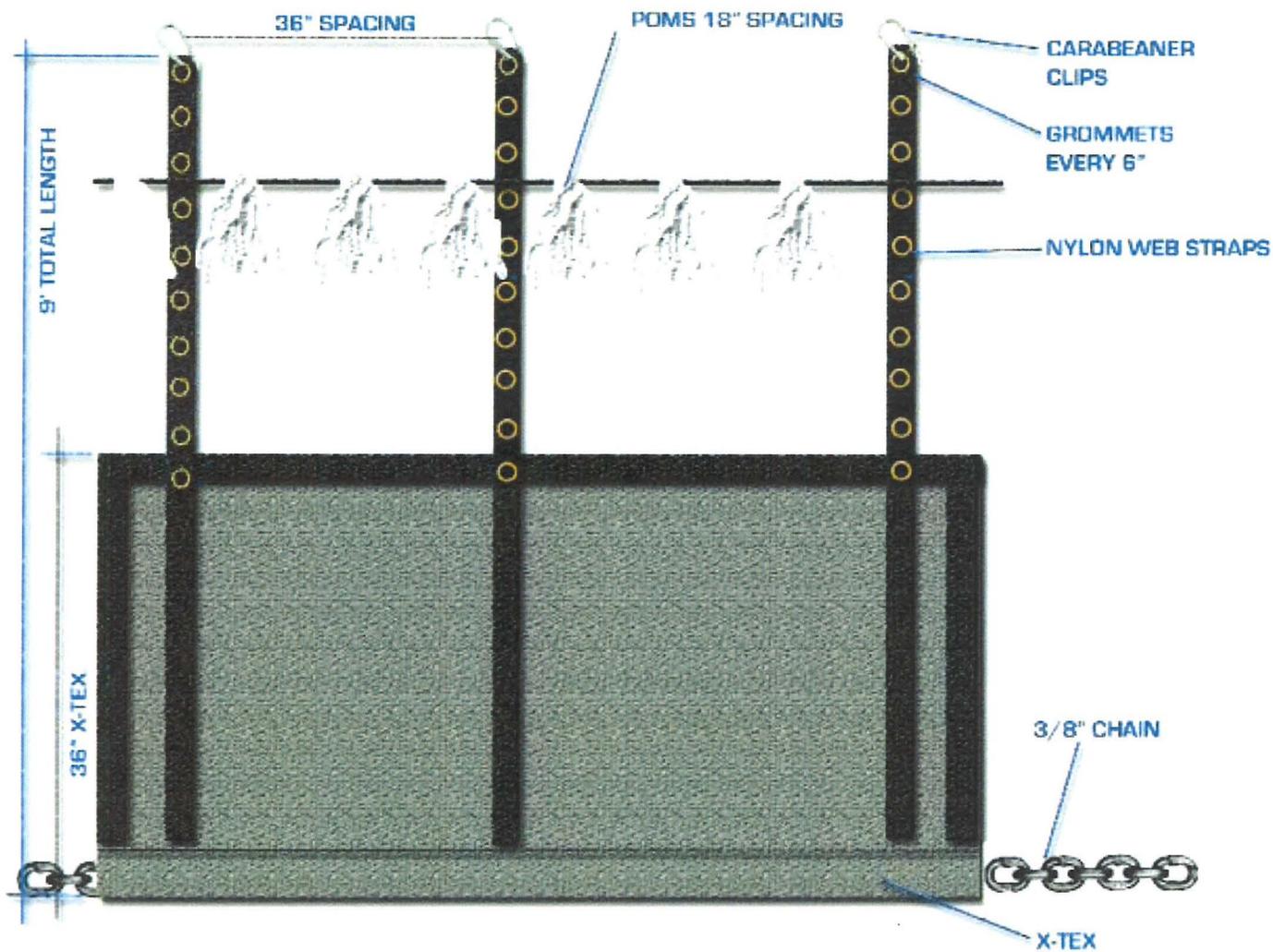
— Surface Boom with Upper Flow through Curtain
— Surface Boom with Full Curtain

— Surface Boom Only
— Buoy Line

Attachment A

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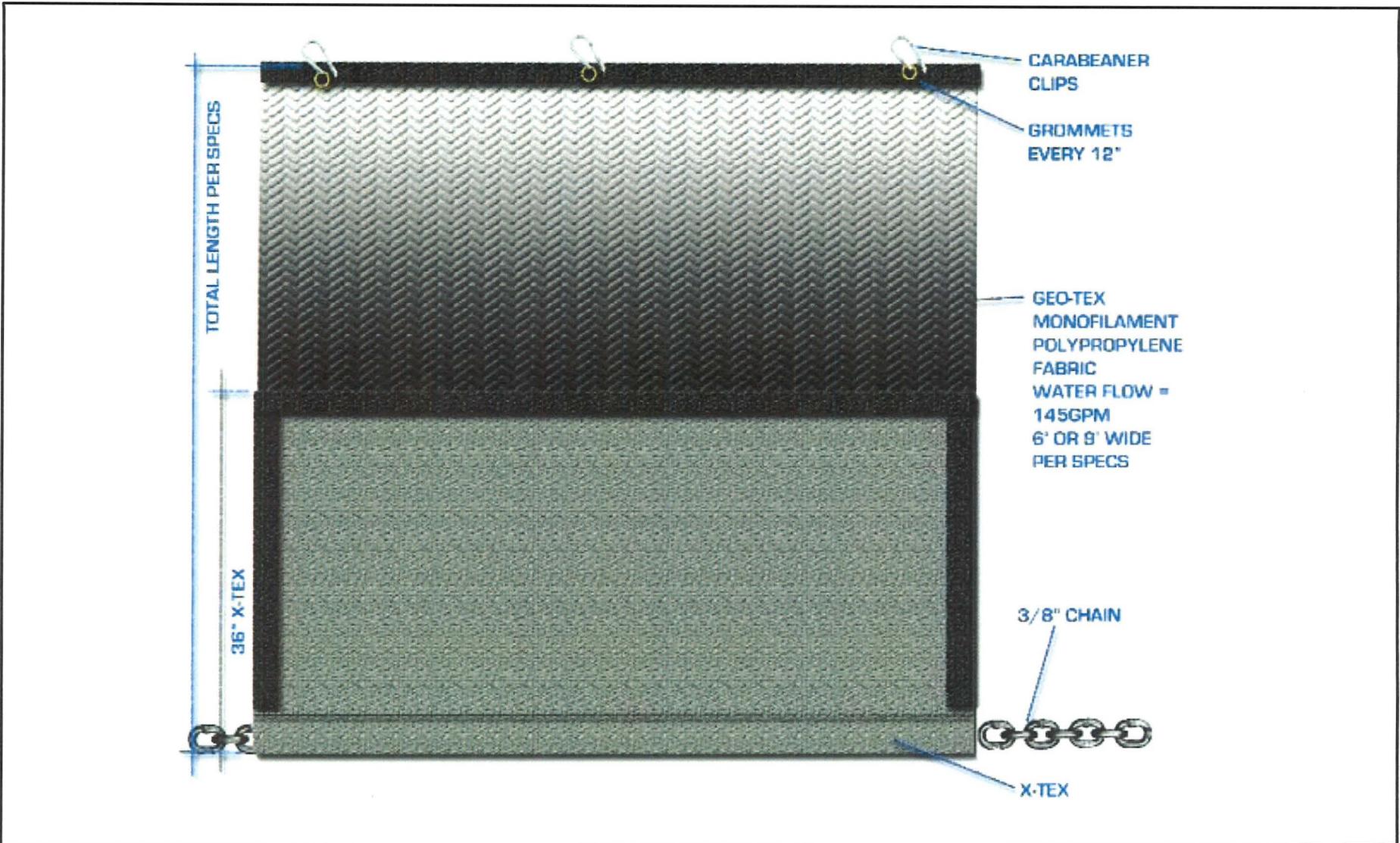
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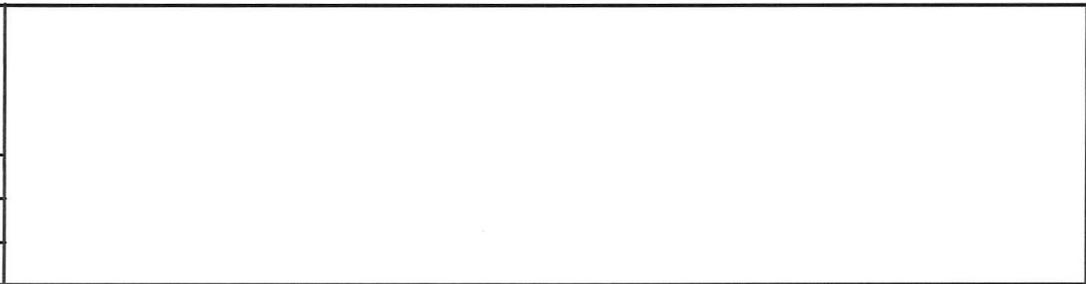
Attachment A
Curtain 1

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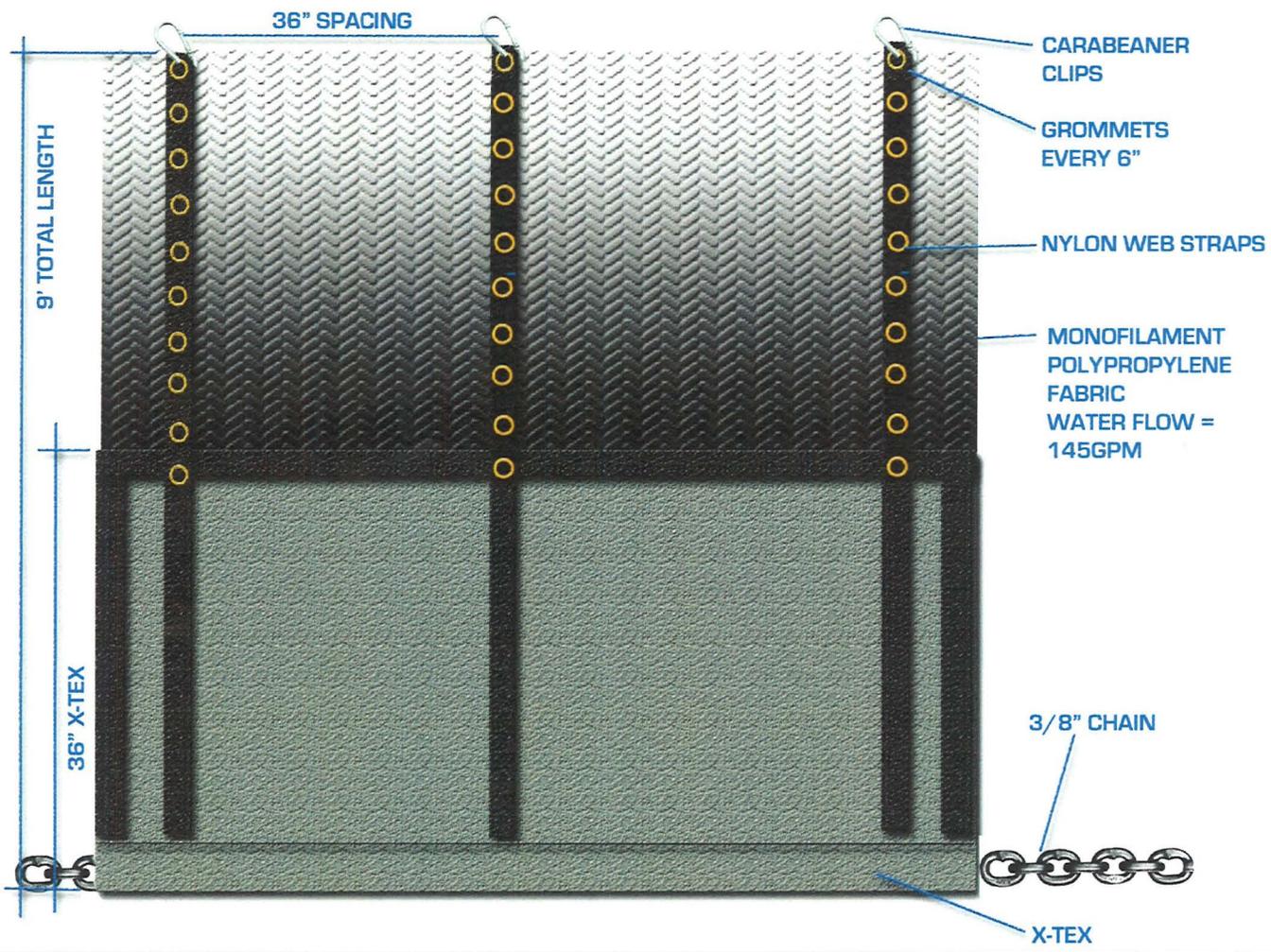


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Attachment A
Curtain 2

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Attachment A
Curtain 3

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