
BAZE-INOGUCHI RESIDENCE

2723 72nd Avenue SE

Downstream Analysis

Mercer Island, Washington
June 11, 2020

Prepared for
Northwest Lifestyle Homes, LLC
PO Box 1637
Mercer Island, WA 98040



191 NE Tari Lane
Stevenson, WA 98648

BURK-2001

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PROJECT OVERVIEW

Presented in this report is a Level 1 downstream analysis for the Baze-Inoguchi Residence. The analysis includes a site inspection and research of City records. An inspection of the site and downstream drainage system was performed on March 12th, 2020.

The project is a single-family redevelopment of a 6,959 sf property. All existing improvements including residence, driveway and concrete footpath will be removed. A new three-level residence, driveway, covered patios and walkway will be constructed. A stormwater collection system will collect roof and driveway runoff and direct this to the City storm drain in the public right-of-way. The driveway runoff and footing drainage will be pumped to the site storm system.

DOWNSTREAM ANALYSIS

Site

The existing site includes a two-level residence (main floor over basement), paved driveway and concrete footpath and stairs. Vegetation includes lawn, planting beds, and one tree. The onsite tree is a 14" DBH cherry. There are four evergreens in the right-of-way adjacent the site.

The existing terrain slope is about 6% on average down towards the northeast. The slope is broken by a retaining wall on the south side of the driveway that lowers the grade to allow access to the garage and basement.

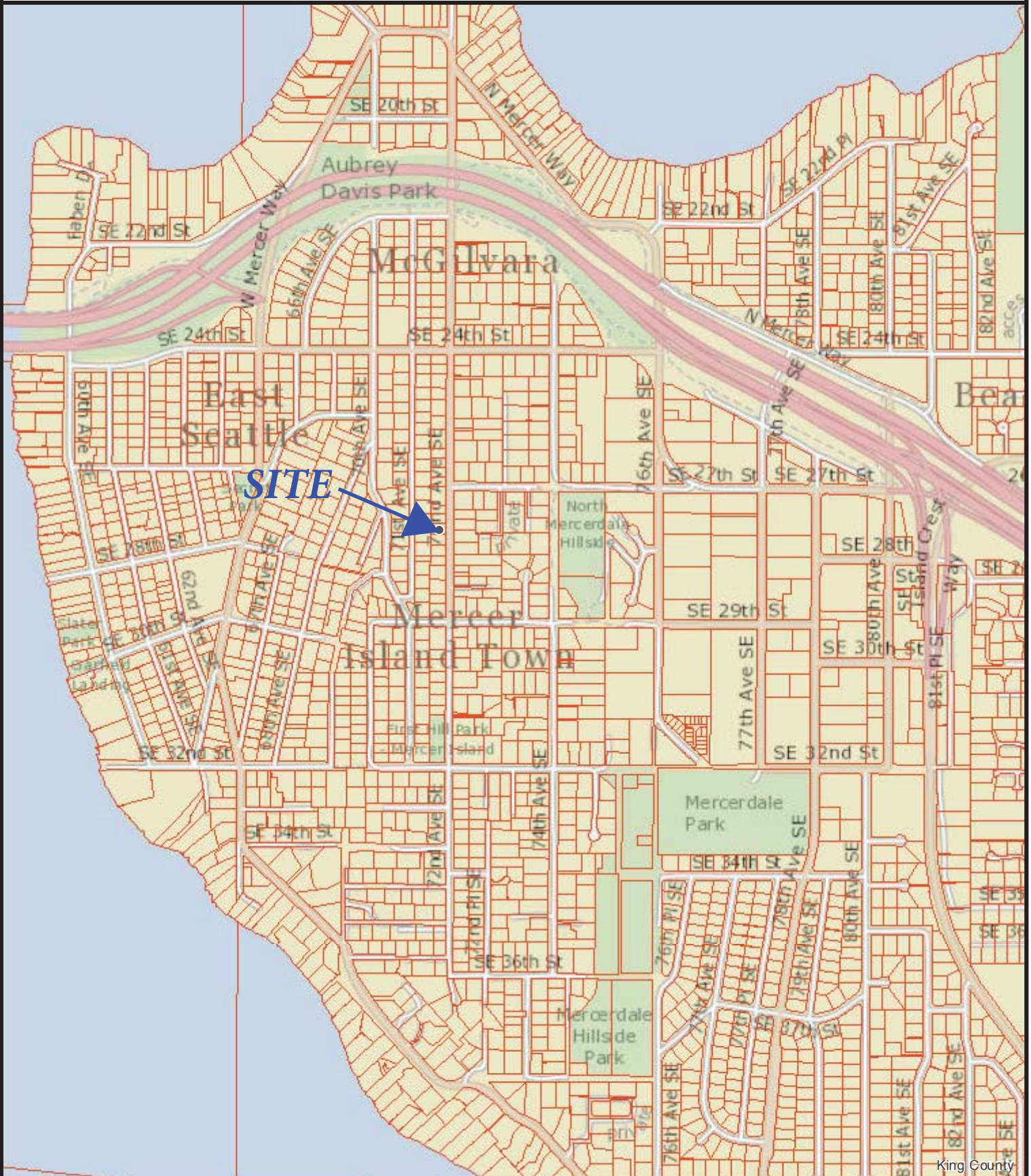
The existing drainage system consists of roof downspouts connecting to below grade pipes. The destination of roof drainage is not apparent and is probably drywells. The drywells will be abandoned and replaced by a new system that connects to the City pipe drainage system in the right-of-way. Runoff from landscaped areas flows north over the north property line following the terrain slope. Runoff from the driveway flows east towards the right-of way

Upstream

A small amount of drainage may enter the property from upslope residential development to the south and west. This runoff is from landscaped areas and is not expected to be significant in quantity. Also, runoff from the unpaved portion of the right-of-way west of the pavement flows into the property. This contributing area extends no further south than the south site boundary; a neighbor's driveway intercepts runoff at that location. Runoff from the paved portion of the right-of way collects in a flowline at the fog line, enters City catchbasins, and does not flow into the site.

Property to the north is downslope of the site and does not contribute runoff.

Vicinity Map



King County

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Date: 6/11/2020

Notes:



King County

Downstream

The proposed site drainage system will connect to the existing City storm drainage system in 72nd Avenue SE. The connection point will be near the northeast property corner. A new catchbasin will be constructed on an existing 12-inch diameter concrete pipe that flows north near the west edge of the road pavement.

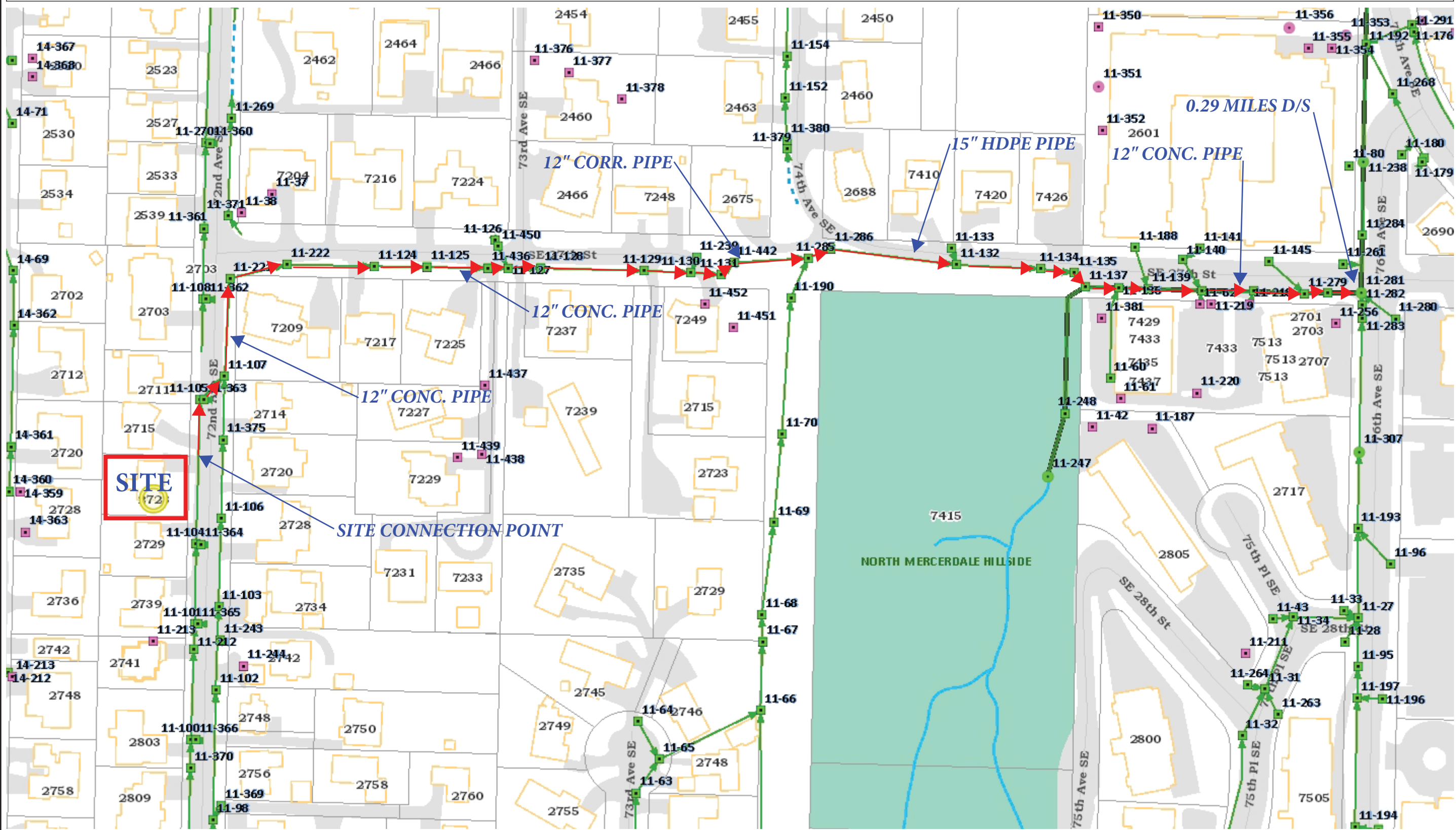
The 12-inch diameter concrete pipe flows north for 75 feet and into a Type 1 catchbasin. This catchbasin connects to another catchbasin located a few feet to the east, collecting runoff at the pavement flowline. Exiting the catchbasin a 12-inch diameter concrete pipe flows north beneath the road pavement to another Type 1 catchbasin located on the east side of the road. Flow continues in a 12-inch diameter concrete pipe about 120 feet north to a catchbasin located at the southeast corner of the 72nd Avenue SE and SE 27th Street intersection. Exiting the catchbasin is a 12-inch diameter concrete pipe that flows east.

The drainage system continues east inside a 12-inch diameter concrete pipe connecting a series of Type 1 catchbasins located in the south gravel shoulder of SE 27th Street. Eventually the system connects to a catchbasin located at the edge of some stairs that descend a steep portion of unimproved right-of-way. The catchbasin is drained by a 12-inch diameter corrugated pipe that flows east beneath and down the slope, passing through two catchbasins then entering a drainage system near 74th Avenue SE and SE 27th Street. The drainage system consists of 15-inch diameter HDPE pipe that connects a series of catchbasins at the south edge of SE 27th Street, eventually connecting to a 12-inch diameter concrete system opposite the east edge of Hillside Park. The 12-inch diameter pipe flows east under the south curb of SE 27th Street eventually discharging into a manhole in the road pavement at the southwest corner of the intersection of SE 27th Street and 76th Avenue SE. According to the City GIS the manhole is drained by a 24-inch diameter pipe that flows north under the west edge of 76th Avenue SE. The manhole is about 1,550 feet (0.29 miles) downstream of the site connection point.

Problems and Mitigations

There were no problems observed during the site inspection. No evidence of flooding, erosion, lack of capacity or capacity constriction were observed along the route. The conveyance system from the site to the quarter-mile point downstream is a constructed system consisting entirely of pipes and catchbasins. The structural condition of catchbasins and of pipes, where they appear in the catchbasins, appears to be good. No unusual siltation in pipes or catchbasins was observed. Due to the apparent adequacy of the downstream drainage system, no onsite or offsite mitigations are proposed.

Off-Site Drainage System



- Legend**
- Storm Catch Basin
 - CB, City Owned
 - CB, Private
 - CB, Unknown
 - Type 2, City Owned
 - Type 2, Private
 - Type 2, Unknown
 - Storm Main
 - Pipe
 - Open Watercourse
 - Piped Watercourse
 - Ditch
 - Culvert
 - Other
 - Storm Main - Private
 - Storm Discharge Point
 - Address
 - Building
 - Property Line
 - Docks
 - Freeway
 - Street
 - Paved Road
 - Paved Driveway
 - Paved Parking Area
 - Parks
 - Lake Washington

0.29 MILES D/S

12" CORR. PIPE

15" HDPE PIPE

12" CONC. PIPE

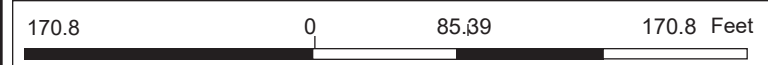
12" CONC. PIPE

12" CONC. PIPE

SITE CONNECTION POINT

SITE

NORTH MERCERDALE HILLSIDE



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1: 1,339



Notes