

TECHNICAL MEMORANDUM

DATE: January 17, 2017
TO: Jason Rich
King County Parks and Recreation Division
FROM: Josh Wozniak, PWS
SUBJECT: Jurisdictional Ditch Analysis
PROJECT NUMBER: 554-1521-151
PROJECT NAME: Lake to Sound Trail - Segment C

INTRODUCTION

This Jurisdictional Ditch Analysis is intended to provide the United States Army Corps of Engineers (Corps) with the information necessary to make a jurisdictional ditch determination within the Lake to Sound Trail—Segment C study area, defined as the area within 100 feet of the trail alignment centerline. This project is an approximately 3.1-mile (16,500 linear feet) segment (Segment C) of what will ultimately be the 16-mile Lake to Sound Trail. Segment C would connect the southern terminus of the Lake to Sound Trail—Segment B (located near the southwest corner of Seattle-Tacoma [Sea-Tac] International Airport) with the Des Moines Creek Trail, located at S 200th Street in the cities of Burien and SeaTac, Washington. Once complete, Segment C would become part of a larger planned system that would serve employment and residential centers in South King County and connect to regional trails in Seattle and the greater Regional Trail System network.

The Segment C project area is a linear corridor that occurs mostly within the existing road rights-of-way for State Route (SR) 509 and Des Moines Memorial Drive (see Figure 1, Attachment A). Segment C is located in Sections 4 and 5, Township 22 North, Range 4 East; and Section 32, Township 23, Range 4 East Willamette Meridian.

The trail will have a typical width of approximately 12 feet of asphalt pavement bounded by two 2-foot-wide shoulders and two 1-foot-wide clear zones, in accordance with American Association of State Highway and Transportation Officials (AASHTO) guidelines. The project includes:

- Constructing a 12-foot-wide asphalt pavement trail with soft-surface (gravel) shoulders
- Performing minor grading to construct the trail
- Building a boardwalk for the trail through Wetland A to minimize the impact to critical areas
- Vacating S 196th Street and 18th Avenue S
- Installing pedestrian-actuated signal crossings
- Installing drainage improvements
- Installing split-rail fencing and plantings to minimize the potential for disturbance to sensitive areas and wildlife

METHODS

Jurisdictional Ditch Identification

Ditches were reviewed using the *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* (Corps and EPA 2007) to determine if they met the Corps criteria for a jurisdictional ditch by exhibiting features such as:

- Ditch excavation in wetlands
- Areas exhibiting scour marks
- Areas lacking vegetation
- Presence of defined channel (bed/bank)
- Areas of flowing or standing water

No jurisdictional ditches were identified in the study area. Because of their absence, no jurisdictional ditch determination forms were completed.

Field Investigation

Field investigations in the project area were conducted by two field biologists over multiple site visits during September 12 to 15, 2016. During this time, biologists walked the proposed trail alignment to examine potential jurisdictional ditches proposed for impact within the project limits. Ditches were verified and re-evaluated on November 11 and 14, 2016 to account for any changes that may have occurred in between the dry (September) and wet (November) seasons.

Weather during the dry season field investigation consisted of clear skies and partially overcast skies with daytime average temperatures in the mid-60s. According to Natural Resources Conservation Service (NRCS) Climate Analysis for Wetlands Tables (WETS tables), as well as climate data recorded at Sea-Tac Airport, periods prior to the September field investigation were determined to be drier than normal (USDA 2016). Wet season field investigations were generally conducted after rain events, with partially overcast skies and daytime average temperatures in the mid-50s. Periods prior to the November field visits were described as normal using a WETS table and climate data from Sea-Tac Airport (USDA 2016).

RESULTS

There are four ditches (Ditch A, B, C, and D) in the study area (Figure 1, Attachment A), none of which met the aforementioned jurisdictional ditch criteria, as summarized in Table 1.

Table 1. Summary of Jurisdictional Status: Ditches Present in Lake to Sound Trail—Segment C Project Area

Ditch	Location ^a (Stationing)	Impacted length (ft)	Impacted Area (ft ²)	Connection to Other Waters of the United States	Drainage Area	Flow Conditions	Substrate	Vegetation	Jurisdictional Determination	Impacts
A	Sta. 211+00 to 203+00	800	2,400	Excavated in upland; flows from upland area to Walker Creek	Approximately 30 acres of high- density housing and impervious surfaces	Ephemeral: responds to impervious surface runoff	Sand, gravel	Facultative wetland vegetation (creeping buttercup, reed canarygrass, etc.)	Not Jurisdictional based on: Excavated in uplands Ephemeral flow	Ditch will be filled and relocated to an enclosed stormwater conveyance system
B	Sta. 190+00 to 188+00	N/A	N/A	Excavated in upland; flows to the West Branch of Des Moines Creek	Approximately 2.8 acres of developed impervious areas	Intermittent: Intercepts groundwater and responds to impervious surface runoff	Potential fill overlaid by coarse gravel	Wetland vegetation (red-osier dogwood, spotted lady's thumb, etc.)	Not Jurisdictional based on: Non-native soil Excavated in upland	No anticipated impacts
C	Sta. 135+00 to 123+00	N/A	N/A	Excavated in uplands; isolated from waters of the U.S.	Approximately 23 acres of mature second- growth upland forests and minimal amounts of developed impervious areas	Ephemeral: responds to impervious surface runoff	Roadside fill (dirt, gravel, sand)	Facultative wetland vegetation	Not Jurisdictional based on: Excavated in uplands Ephemeral flow No connectivity to waters of the U.S. Fully vegetated	No anticipated impacts
D	Sta. 104+00 to 100+00	N/A	N/A	Excavated in uplands; flows to Des Moines Creek	Approximately 5.9 acres of mature second- growth upland forests and developed impervious areas	Ephemeral: responds to impervious surface runoff	Roadside fill (dirt, gravel, sand)	Facultative upland vegetation (English ivy, dandelion, etc.)	Not Jurisdictional based on: Excavated in uplands Ephemeral flow Fully vegetated	No anticipated impacts

^a Approximate location along the proposed design alignment

Ditch A

Ditch A is a roadside ditch located along the south shoulder of Des Moines Memorial Drive (see Attachments A and B). It interfaces with the proposed project from Station 211+ 00 to 203+00.

Relationship to Other Regulated Waters of the U.S.

Ditch A appears to have been excavated and drains to the uplands. The ditch conveys water to Wetland B, identified in the Lake to Sound Trail—Segment C Wetland Discipline Report (Parametrix 2017).

Drainage Area

The drainage area to the ditch is approximately 30 acres. Flow to the ditch is derived primarily from local runoff from adjacent impervious surfaces (Des Moines Memorial Drive and adjacent private properties).

Flow Conditions

The site was visited on two occasions during 2016: September 13 and November 14. On September 13, there was no measurable precipitation for the previous 120 hours, as recorded at the Sea-Tac Airport weather station (USDA 2016). On November 14, it rained 0.34 inches in the previous 48 hours and 2.05 inches in the previous week (USDA 2016). There was no precipitation and standing or flowing water was absent during the September field investigation. During the November field investigation, there was evidence of heavy flow through the ditch (i.e., sediment deposits and flattened grass); however, there was no standing or flowing water present. Flow conditions are therefore assumed to be ephemeral with water conveyance in the ditch only during rainfall events.

Jurisdictional Determination

Ditch A does not meet the criteria to be a jurisdictional water of the U.S. It was excavated in the uplands and exhibits ephemeral flow to a water of the U.S. (Wetland B).

Impacts

Ditch A will be filled and relocated into an enclosed stormwater conveyance system. Impacts to this potentially non-jurisdictional ditch segment will not result in any discernible loss of function and will not require mitigation.

Ditch B

Ditch B is an excavated depression located adjacent to the SR 509 right-of-way and south of Des Moines Memorial Drive (see Attachments A and B). It interfaces with the proposed project from Station 190+00 to 188+00. Despite intermittent flow during the wet season, sparse vegetation, and connection to other waters of the U.S. (West Branch of Des Moines Creek), Ditch B is determined to be a stormwater feature, closely resembling a bioswale, installed in approximately 2015 during the redevelopment of the private parcel. The feature occupies an area that was previously paved.

Relationship to Other Regulated Waters of the U.S.

Ditch B appears to have been excavated in the uplands. Water in the ditch intermittently moves from north to south before entering a drainage feature and piped to the West Branch of Des Moines Creek, positioned approximately 800 linear feet to the south.

Drainage Area

The drainage area to the ditch is approximately 2.8 acres. Hydrologic inputs to the ditch are derived from local drainage via adjacent impervious surfaces.

Flow Conditions

The site was visited on November 14. Prior to this field investigation, rainfall was measured at 0.34 inches in the previous 48 hours and 2.05 inches in the previous week, as recorded at the Sea-Tac Airport weather station (USDA 2016). Water was flowing through the ditch during the site visit and exhibited a water depth of approximately 4 inches. Flow conditions are assumed to be at least intermittent.

Jurisdictional Determination

Ditch B does not meet the criteria for a jurisdictional water of the U.S. It was installed as a stormwater feature and is therefore presumed to be non-jurisdictional.

Impacts

Ditch B is positioned adjacent to the proposed project and will not be affected; thus, no mitigation will be required.

Ditch C

Ditch C is a roadside ditch located along the south shoulder of S 196th Street (see Attachments A and B). It interfaces with the proposed project from Station 135+00 to 123+00.

Relationship to Other Regulated Waters of the U.S.

Ditch C appears to have been excavated in the uplands and also drains to the uplands. The ditch travels approximately 1,700 linear feet before discharging to adjacent uplands positioned in the Port of Seattle's property, south of Sea-Tac Airport.

Drainage Area

The drainage area to Ditch C is approximately 23 acres, which includes mature second-growth upland forests and small areas of impervious surfaces (S 196th Street). Local runoff from S 196th Street is the primary source of hydrology to Ditch B.

Flow Conditions

The site was visited on two occasions during 2016: September 14 and November 14. On September 14, there was no measurable precipitation for the previous 144 hours, as recorded at the Sea-Tac Airport weather station (USDA 2016). On November 14, rainfall was measured at 0.34 inches in the previous 48 hours and 2.05 inches in the previous week (USDA 2016). There was no precipitation and standing or flowing water was absent during the September field investigation. During the November field investigation, there were small areas of standing water with no observed flow. Flow conditions are therefore assumed to be ephemeral.

Jurisdictional Determination

Ditch C does not meet the criteria for a jurisdictional water of the U.S. It was excavated in the uplands, exhibits ephemeral flow, is vegetated, has minimal to no evidence of scour, and does not convey water to a water of the U.S.

Impacts

There are no anticipated impacts to Ditch C; thus, no mitigation is required.

Ditch D

Ditch D is a roadside ditch located along the south shoulder of S 200th Street (see Attachments A and B). It interfaces with the proposed project from Station 104+ 00 to 100+00.

Relationship to Other Regulated Waters of the U.S.

Ditch D appears to have been excavated in the uplands and also drains to the uplands. The ditch travels approximately 1,100 linear feet before discharging to Des Moines Creek, a water of the U.S.

Drainage Area

The drainage area to the ditch is approximately 5.9 acres. Flow to the ditch is derived primarily from local drainage via adjacent impervious surfaces.

Flow Conditions

The site was visited on two occasions during 2016: September 14 and November 14. On September 14, there was no measurable precipitation for the previous 144 hours, as recorded at the Sea-Tac Airport weather station (USDA 2016). On November 14, rainfall was measured at 0.34 inches in the previous 48 hours and 2.05 inches in the previous week (USDA 2016). There was no precipitation and standing or flowing water was absent during the September field investigation. During the November field investigation, there was no standing water or observed flow. Flow conditions are therefore assumed to be ephemeral. In addition, the ditch was vegetated with minimal to no signs of scour.

Jurisdictional Determination

Despite draining to Des Moines Creek, Ditch D does not meet the criteria for a jurisdictional water of the U.S. It was excavated in the uplands, exhibits ephemeral flow, is vegetated, and has minimal to no evidence of scour.

Impacts

There are no anticipated impacts to Ditch D; thus, no mitigation is required.

REFERENCES

Corps (U.S. Army Corps of Engineers) and EPA (U.S. Environmental Protection Agency). 2007. U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook. May 30, 2007.

Parametrix. 2017. Lake to Sound Trail—Segment C Wetland and Stream Discipline Report. Prepared by Parametrix, Seattle, WA. January 2017.

USDA (United States Department of Agriculture). 2016. Climate Data for King County, Washington. USDA Field Office Climate Data. Available at: <http://agacis.rcc-acis.org/53033/obsmn/results>.

Attachment A
Vicinity Map

FILE: PS1521151P2CT2JD-01 LAYOUT: J01 PATH: U:\PSO\Projects\Clients\1521-151\L251-Seg\995vcs\CADD\Phase 2\Task 27200C\Figures\Ditch PLOTTED BY: purgubut DATE: Friday, December 09, 2016 3:55:21 PM

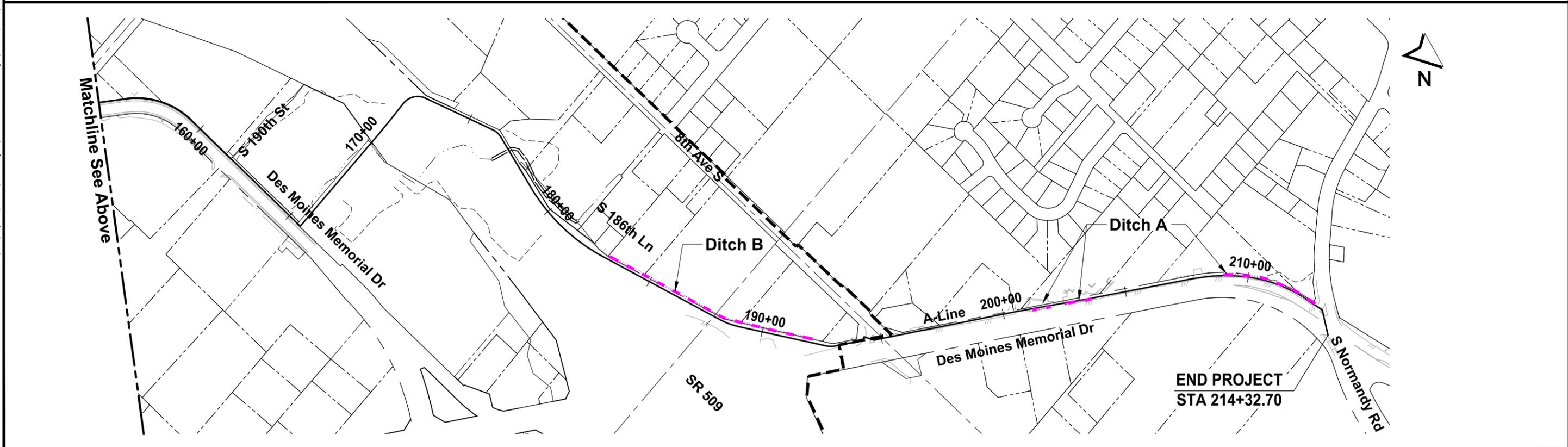
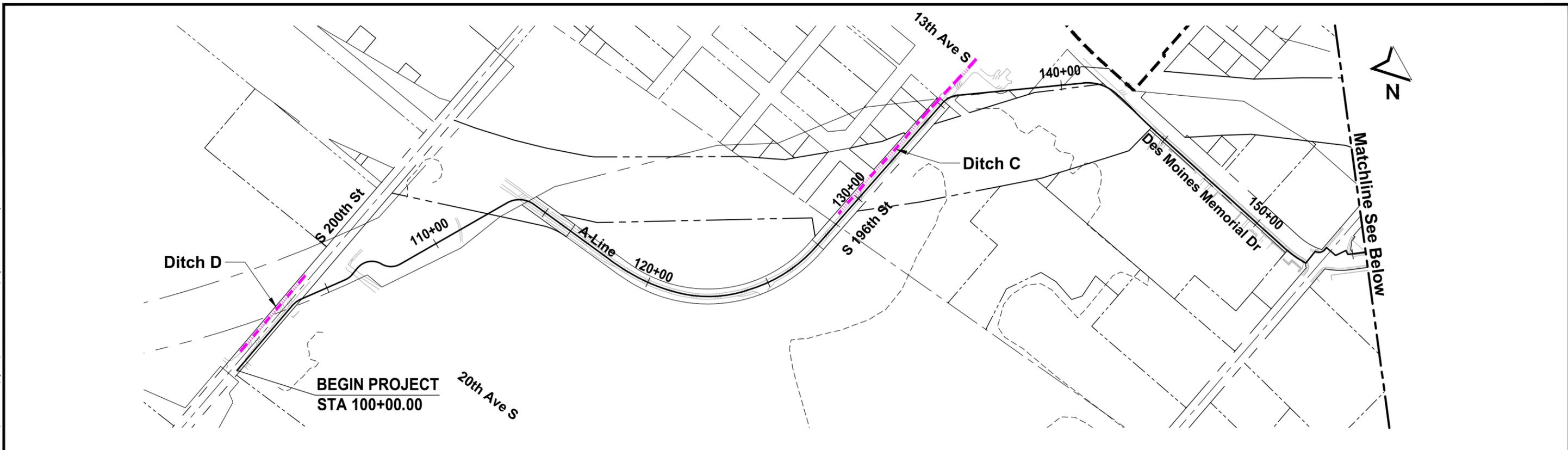


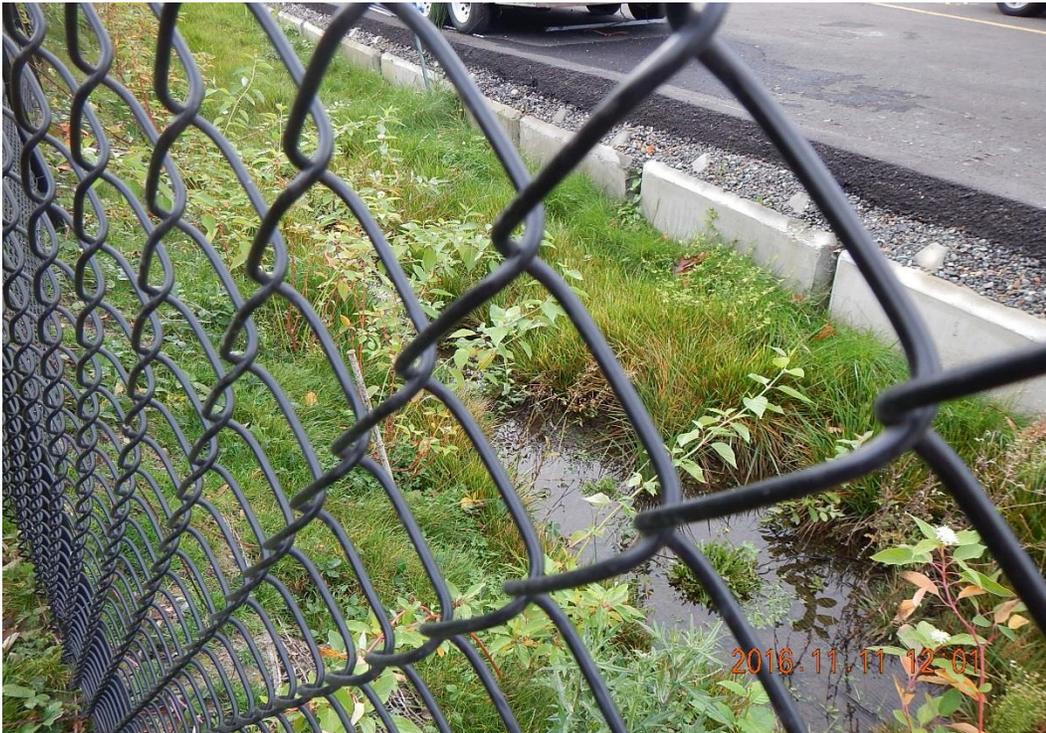
Figure 1
Jurisdictional Ditch Analysis
Lake to Sound Trail Segment C
From S 200th St to S Normandy Road /
Des Moines Memorial Drive Intersection



Attachment B
Representative Photographs



Ditch A – Positioned at the north end of the project area adjacent to Des Moines Memorial Drive



Ditch B – Positioned adjacent to the project area west of the SR 509 interchange and south of Des Moines Memorial Drive



Ditch C – Positioned in the central project area south of S 196th Street



Ditch D – Positioned at the southern end of the project area south of S 200th Street