

1991 December 03

TO: MUNICIPAL MANAGER  
FROM: APPROVING OFFICER  
SUBJECT: SUBDIVISION REFERENCE #72/91  
D.L. 57, Lot 278, Plan 35621  
2820 Underhill Avenue  
SEARS WAREHOUSE SITE

PURPOSE: To obtain Council approval for the piping of portions of two watercourses traversing the subject site.

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RECOMMENDATION:

1. THAT Council authorize the piping of portions of two watercourses traversing the subject site as outlined in Section 3.0 of this report.

R E P O R T

1.0 BACKGROUND:

On 1979 July 16, Council adopted the recommendation in Manager's Report No. 49, Item 3, more particularly:

- "1. THAT Council direct staff to report on only those watercourses where enclosure of the watercourse (in whole or in part) would be recommended by all departments concerned or where departments are not unanimous on the treatment to be applied to a specific watercourse."

In accordance with the first part of this directive, the following report is submitted for the consideration of Council.

2.0 EXISTING SITUATION:

- 2.1 The Planning and Building Department received an application for subdivision of the subject property into two lots under the existing M3 zoning as shown on the attached sketch. The westerly portion of the site (proposed Lot 1) contains the existing Sears warehouse. The easterly portion (proposed Lot 2) is vacant and there are two watercourses traversing this section of the site.

The original Lake City industrial subdivision servicing concept included piping these watercourses through this site. This requirement was waived pending future development of the site as the desirable location of the storm sewers and easements could not be established at that time. Temporary inlets were installed on these storm sewers north of Eastlake Drive.

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Both watercourse systems are currently piped upstream for 300 m (westerly) and 120 m (easterly) and downstream for 1200 m (storm outlet is south of Winston Street at the BNR).

2.2 The following points are noted in connection with the westerly watercourse on proposed Lot 2:

2.2.1 The original locations of the westerly watercourse are shown on the sketch. Portions of it were diverted in 1968 into a temporary ditch, with the final diversion and partial piping completed in 1973 in connection with the building of the Sears warehouse. The existing man-made temporary drainage ditch was constructed to carry the drainage from the new storm sewer outlet to the temporary inlet at Eastlake Drive. No portion of this watercourse remains in its original location, although the current open section is now heavily treed and thick with underbrush.

2.2.2 The existing man-made temporary drainage ditch was constructed to temporary standards without rock lining utilizing 1.5:1 side slopes. The 1.5:1 side slopes are failing into the creek and the channel invert and sides are suffering badly from erosion. The flow has eroded the banks such that in some areas there are semi-vertical failure slopes up to 5 m high. For much of the temporary drainage ditch the semi-vertical failure slopes average 3 m in height and the overgrowth is falling into the channel along with the soil.

2.2.3 The failing slopes are creating sediment and bed load problems in the downstream storm sewer system, and the overgrowth that falls into the channel creates a continual maintenance problem and potential of flooding and property damage by accumulating on the Eastlake inlet.

2.3 The following points are noted in connection with the easterly watercourse on proposed Lot 2:

2.3.1 The north half of the easterly watercourse system was enclosed (with Council approval granted on 1989 June 19 - Manager's Report No. 43, Item 21) when the GVRD maintenance building was constructed. This has reduced much of the bed load and siltation problems in the downstream storm sewers, but the Eastlake inlet is still subject to the same problems as the westerly channel, only to a lesser extent.

2.3.2 When the H.Y. Louie site to the east of proposed Lot 2 was created, an easement was provided for a future storm sewer to facilitate enclosing the easterly watercourse where it traverses this site. The requirement to construct the storm sewer was waived pending future development of the western portion of the H.Y. Louie site.

### 3.0 RECOMMENDED WATERCOURSE TREATMENT:

3.1 The Planning and Building Department recommends leaving the southerly 200 feet of the westerly watercourse in its current open and natural condition with minimal disturbance to the existing trees and vegetation and that the subdivider have a tree survey completed identifying existing trees. This section of the watercourse appears to be stable without the slope failure problems noted in Section 2.2 above.

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- 3.2 The Acting Chief Public Health Inspector is in agreement with this recommendation. This would allow staff to monitor creek water quality and provide an access for staff to collect water samples.
- 3.3 The Director Engineering supports leaving this section in an open and natural condition subject to a number of conditions which are outlined as follows:
  - 3.3.1 The developer is to retain a geotechnical engineer to assess the stability of the ravine slopes in this area and make appropriate recommendations for stabilization if necessary.
  - 3.3.2 The developer will be responsible for the design and construction of appropriate outfall structures and energy dissipation structures for the portion of watercourse which is being recommended for enclosure to the north of this open section.
  - 3.3.3 The developer will be responsible for designing and constructing a permanent inlet structure complete with trash screen north of Eastlake Drive plus any localized rip-rapping or other form of erosion protection as needed within the open section.
  - 3.3.4 There will undoubtedly be some form of construction access required and the developer should plan his construction activity in such a way that the access road can continue to serve as a maintenance facility after the construction has been completed. Detailed specifications and dimensions for the maintenance route will be dependent on the type of inlet structure and the level of maintenance required.
  - 3.3.5 The developer's design consultant is to work closely with both the District's Design and Operations personnel.
- 3.4 The Planning and Building Department, after reviewing the Director Engineering's conditions noted above, also recommends that, in addition to the required tree survey, the developer be responsible for the preparation and submission of a landscape plan, to be prepared by a qualified Landscape Architect, showing the existing trees being retained, the engineering design of this section of the watercourse (to be approved by the Planning and Building Department as well as the Engineering Department), and any landscape enhancement (i.e. replanting) as deemed necessary by the Planning and Building Department.

A 215 Covenant will be required to ensure this section of the watercourse is maintained in an open condition in accordance with approved landscape and engineering design plans.
- 3.5 The Planning and Building Department, Environmental Health Department, and Engineering Department are all unanimous in their recommendation that the remainder of the westerly watercourse north of the southerly 200 feet be piped for the reasons mentioned in Section 2.2 above.
- 3.6 All departments are unanimous in their recommendation that the portion of the easterly watercourse traversing proposed Lot 2 be piped for the reasons mentioned in Section 2.3 above.

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**4.0 CONCLUSIONS:**

It is recommended that portions of the two watercourses traversing proposed Lot 2 be piped to solve the identified problems. If this recommendation is not supported, the developer will be required to cut back the existing side slopes at 2:1 slope so they are no longer unstable, rock line the invert and sides of the drainage channel, construct new permanent inlets on the Eastlake storm inlets complete with overflow protection, vehicular access, debris barriers, and inlet grillage, and construct a permanent energy dissipation outfall structure on the outlet of the easterly (GYRD) storm sewer. This would create ongoing maintenance problems and higher potential for flooding liability. In some areas the side slopes are up to 15 m high. A 2:1 side slope would result in a top of bank approximately 30 m from the channel and a total ravine width of up to 60 m in width. This would be very restrictive on the development of the site.

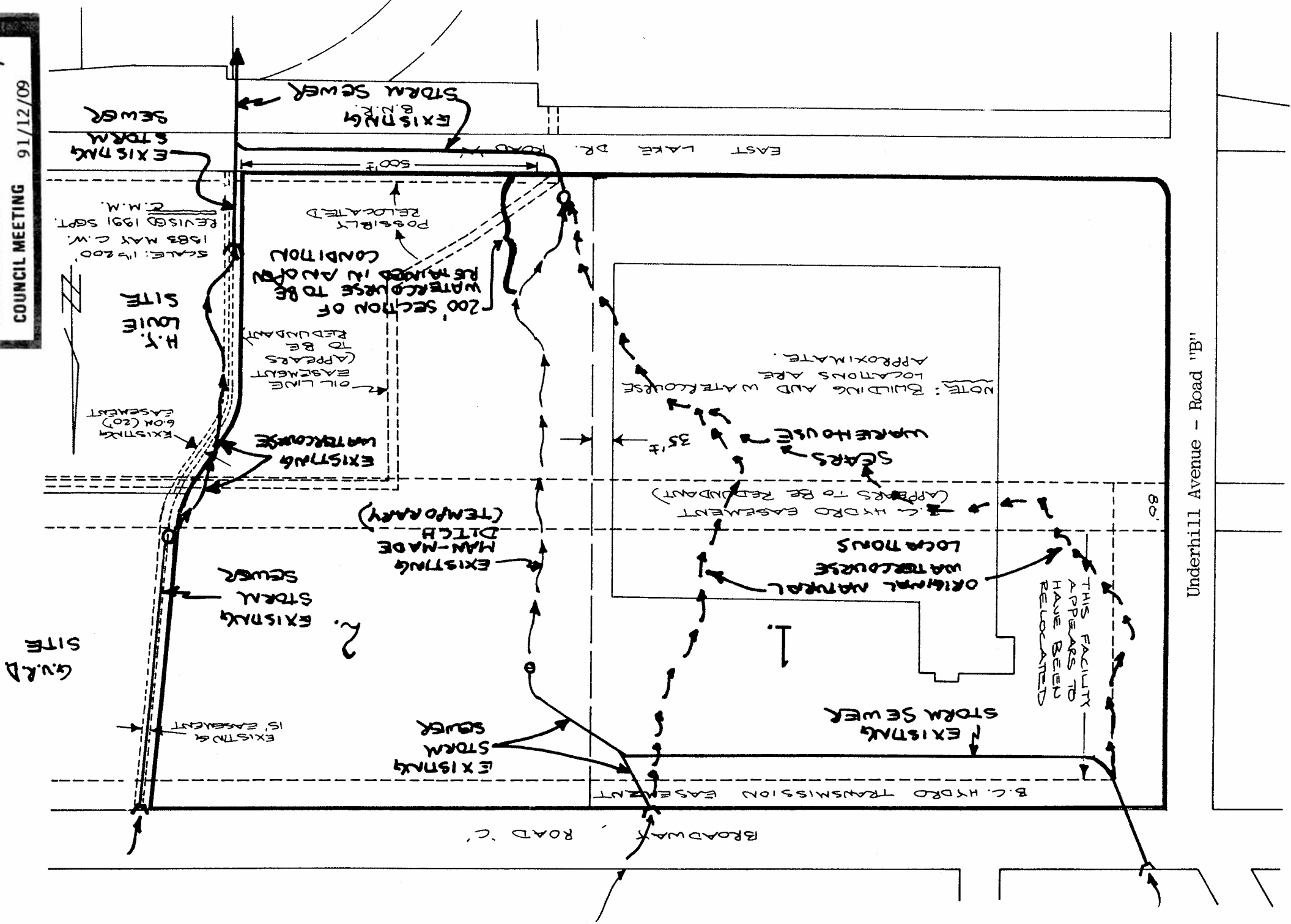
The retention of the southerly 200 feet of the westerly watercourse in an open, natural and possibly enhanced condition will provide an aesthetically pleasing green space and visual relief in this industrial park where the majority of the storm system is piped, and will enable the continued monitoring of the creek water quality and the collection of water samples.

CMM:hr  
Att.

cc: Director Engineering  
Acting Chief Public Health Inspector  
Sarah Groves, Ecosystem Planner

  
A. L. Parr  
APPROVING OFFICER

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P.L. 57  
 LOT 278  
 PLAN 35621

ZONING: M3

