# TECHNICAL INFORMATION REPORT

**FOR**

## LR RESIDENCE

**C&A PROJ # 159-001-17**

PREPARED FOR:

**BABIENKO ARCHITECTS**
815 SEATTLE BLVD S
SEATTLE, WA 98134

PREPARED BY:

**Cecil & Associates, LLC**
PO BOX 598
BOTHELL, WA 98041

AUGUST 25, 2017
(REVISED OCTOBER 17, 2017)
PERMIT SUBMITTAL

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# 1. PROJECT OVERVIEW

## 1.1: PROJECT DESCRIPTION

The LR Residence project is a single-family residence located at 5460 East Mercer Way in the city of Mercer Island, Washington, at the site of an existing single-family residence (see Figure 1 – Vicinity Map). The project includes the expansion of the existing residential structure as well as the expansion of existing concrete patio and walkway areas. The building expansion includes additions located on the east, south, and west faces of the existing residence and will total approximately 1,130 square feet. The new patio and walkways will be located on the eastern portion of the home and will total approximately 664 square feet. See a summary of the existing and proposed condition areas in the following table.

| | Existing Condition | Proposed Condition |
|---|---|---|
| Pervious Surface (SF) | 15,649 | 13,855 |
| Impervious Surface (SF) | 4,911 | 6,705 |
| Total (SF) | 20,560 | 20,560 |

Stormwater mitigation for the site will comply with the 2017 City of Mercer Island Stormwater Regulations. The City has adopted the 2014 Stormwater Management Manual for Western Washington with amendments in chapter 15.09 of the municipal code.

## 1.2: EXISTING CONDITIONS

The project site is located on Mercer Island and is surrounded by single-family homes to the north, south and west, with Lake Washington to the east. The home is accessed by a driveway on the western property line that connects to Glenhome Drive.

The current site is developed with a single-family residence with associated impervious walkways, patios, and a driveway. The topography is mildly to moderately sloping from west to east down to Lake Washington.

The existing residence has a system of downspouts and roof drain lines that carry non-pollution generating stormwater runoff directly to a stormwater outfall to Lake Washington on the eastern property line.

## 1.3: PROPOSED CONDITIONS

The project will include three building additions to the existing residence. Additionally, the project will add two new 4" thick concrete patio slabs for pedestrian use.

To accommodate the new building additions the project will be installing approximately 100 linear feet of 6" roof drain pipe along with two new downspouts on the proposed additions. This new roof drain pipe will connect to the existing system that carries stormwater east to the stormwater outfall to Lake Washington along the project's eastern property line.

See Figure 3 – Proposed Condition for further information.

## 2. CONDITIONS AND REQUIREMENTS

This application will be subject to the current City of Mercer Island stormwater regulations, which adopts the 2014 Ecology Stormwater Management Manual ("the Manual"). The project adds less than 2,000 square feet of impervious surface and therefore is required only to comply with minimum requirement #2 (see Figure 2 – Flow Chart for Determining Requirements for Redevelopment). The project has opted to address minimum requirements #1 through #5 in this drainage report, outlined below.

### 2.1 MINIMUM REQUIREMENT #1 – PREPARATION OF STORMWATER SITE PLANS

Stormwater Site Plans have been prepared for this project, and are included in the LR Residence Permit Drawings for the project. The Stormwater Site Plans have been prepared in accordance with Volume I, Chapter 3 of the Stormwater Manual.

### 2.2 MINIMUM REQUIREMENT #2 – CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

This project does not exceed the threshold of one acre of disturbance; and, therefore, is not required to file a Notice of Intent with Ecology to obtain coverage under Ecology's Construction Stormwater General Permit. Temporary Erosion Sedimentation Control Plan (TESC) has also been prepared and submitted with the Permit Documents.

### 2.3 MINIMUM REQUIREMENT #3 – SOURCE CONTROL OF POLLUTION

The project does not meet land use or thresholds for Source Control requirements. Additionally, no permanent activities on site are anticipated to create point source pollution outside the building. See *Section 4* for details on the source control during construction.

### 2.4 MINIMUM REQUIREMENT #4 – PRESERVATION OF NATURAL DRAINAGE SYSTEMS AND OUTFALLS

General topography of the site slopes from the west to the east with stormwater runoff from non-pollution generating surfaces collected and conveyed to the west directly to Lake Washington. The stormwater system associated with the existing residence will remain undisturbed to the extent feasible. Stormwater will continue to be collected off the residence roof via downspouts and conveyed to Lake Washington. The project maintains and does not encroach on the existing 50 foot shoreline buffer

### 2.5 MINIMUM REQUIREMENT #5 – ON-SITE STORMWATER MANAGEMENT

The City of Mercer Island requires the implementation of on-site stormwater management BMPs in accordance with thresholds and standards set forth in Mercer Island City Code Chapter 15.09.050. The project does not meet any of the thresholds set out in Chapter 15.09.050 section A.1. and therefore is not required to provide on-site stormwater management. Additionally, according to *Figure 3: Low Impact Development Infiltration Feasibility on Mercer Island* on the City of Mercer Island Stormwater Regulations webpage, the project is located within an area where infiltrating LID facilities are not permitted.

## 3. CSWPPP ANALYSIS AND DESIGN

The project will provide BMPs per 2014 Stormwater Management Manual for Western Washington Volume II Chapter 4 Best Management Practices to prevent erosion and offsite sediment transport during construction until the site is fully stabilized. A discussion of BMPs that will be included in the ESC Plan is shown below.

Prior to beginning land disturbing activities, all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area will be clearly marked to prevent damage and offsite impacts. A stabilized entrance for construction vehicle access will be provided to minimize the tracking of sediment onto public roads. Entrance and exit shall be limited to one route. If sediment is tracked offsite, public roads shall be cleaned thoroughly at the end of each day, or more frequently during wet weather, if necessary. In order to prevent erosion and trap sediments within the project site, the following BMPs will be used approximately as shown on the ESC plan:

- The existing asphalt driveway will be used as a construction entrance.
- Silt fencing will be placed along slope contours at the downslope limit of site, perpendicular to the flow path per C233 Silt Fence.
- Mulch will be spread over all cleared areas of the site when they are not being worked. Mulch will consist of air-dried straw and chipped site vegetation per BMP C121 Mulching.

Runoff from disturbed areas will pass through sediment control measures to prevent the transport of sediment downstream until the disturbed area is fully stabilized. Sediment controls will be installed as one of the first steps in grading and will be functional before other land disturbing activities take place. Sediment control BMPs that may be used consist of:

- Silt Fence per BMP C233 Silt Fence
- Straw wattles in accordance with BMP C235 Wattles will be provided as needed in areas where BMP Silt Fence is not sufficient

All exposed and unworked soils will be stabilized through the application of cover measures to protect the soil from the erosive forces of raindrop impact, flowing water, and wind erosion. A stockpile will be located at the southwest of the residence to provide ease of protection. One or more of the following cover measures may be used to meet this requirement during the construction phase:

- Mulching per BMP C121 Mulching
- Nets and Blankets per BMP C122 Nets and Blankets
- Plastic Covering per BMP C123 Plastic Covering
- Seeding per BMP C120 Temporary and Permanent Seeding
- Sodding per BMP C124 Sodding

Cover measures will be applied in accordance with the following requirements:

1. Cover measures must be installed if an area is to remain unworked for more than seven days during the dry season (May 1 to September 30) or for more than two consecutive working days during the wet season (October 1 to April 30). These time limits may be relaxed if an area poses a low risk of erosion due to soil type, slope gradient, anticipated weather conditions, or other factors. Conversely, the project may reduce these time limits if site conditions warrant greater protection (e.g., adjacent to significant aquatic resources or highly erosive soils) or if significant precipitation is expected.
2. Any area to remain unworked for more than 30 days shall be seeded or sodded unless determined that winter weather makes vegetation establishment infeasible. During the wet season, exposed ground slopes and stockpile slopes with an incline of 3 horizontal to 1 vertical (3H:1V) or steeper and with more than ten feet of vertical relief shall be covered if they are to remain unworked for more than 12 hours. Also during the wet season, the material necessary to cover all disturbed areas must be stockpiled on site. The intent of these cover requirements is to have as much area as possible covered during any period of precipitation.

Stormwater runoff originating on the site and/or entering the site from offsite areas will be controlled so as to minimize erosion of disturbed areas and exposed cut and fill slopes. The following runoff control measures may be used as needed per the conditions of use and specifications for each measure:

- Interceptor Dikes and Swales per BMP C200 Interceptor Dike and Swale
- Grass lined channels per BMP C201 Grass-Lined Channels
- Pipe Slope Drain per C204 Pipe Slope Drains

Prior to final construction approval, the project site will be stabilized to prevent sediment-laden water from leaving the project site after project completion. All disturbed areas of the project site will be vegetated or otherwise permanently stabilized. At a minimum, disturbed areas will be seeded and mulched to ensure that sufficient cover will develop shortly after final approval. All temporary ESC measures will be removed within 30 days after final site stabilization is achieved or after the temporary measures are no longer needed. Trapped sediment will be removed or stabilized onsite. Disturbed soil areas resulting from removal of measures or vegetation will be permanently stabilized with seeding or sodding.

## 4. FIGURES

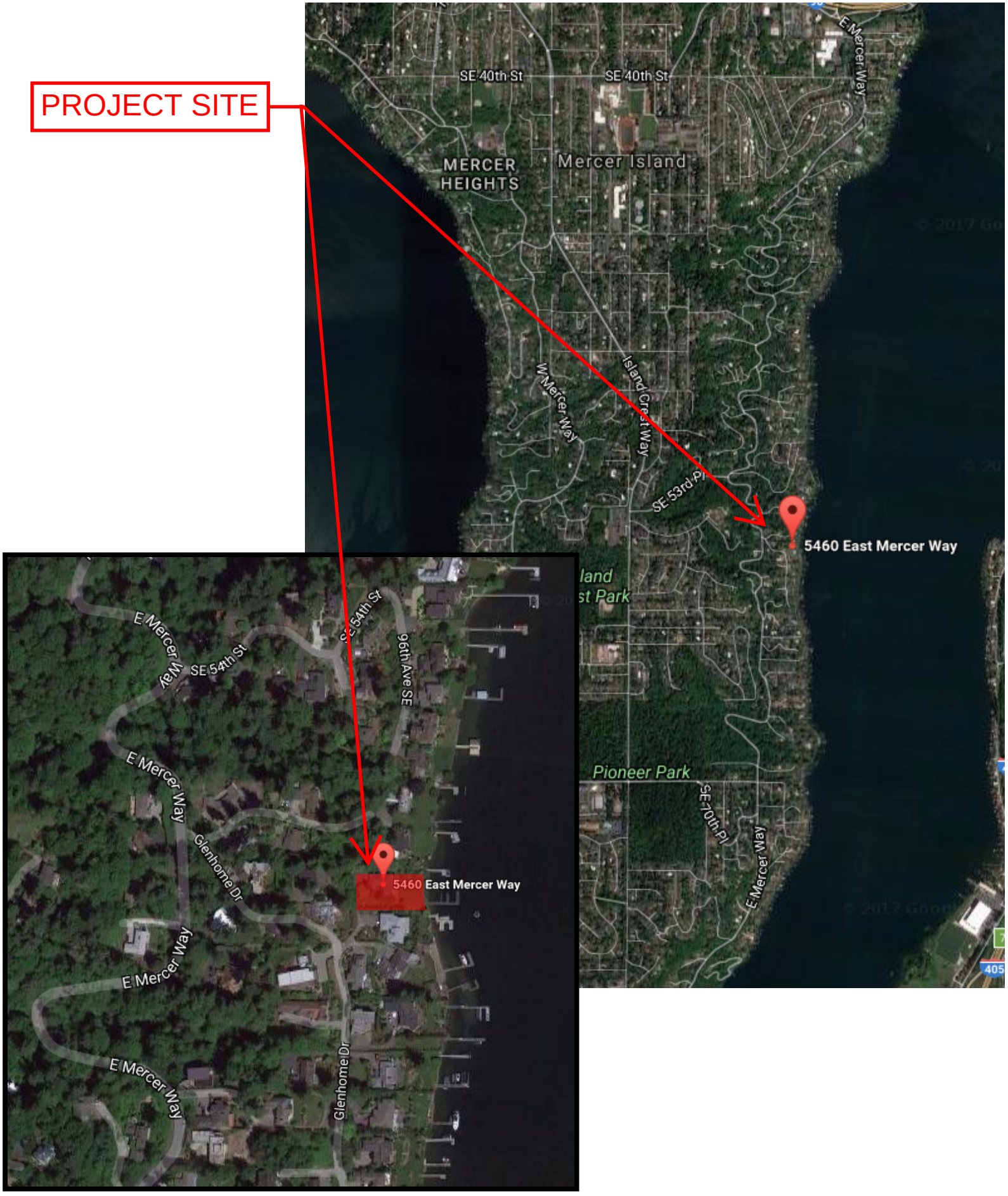
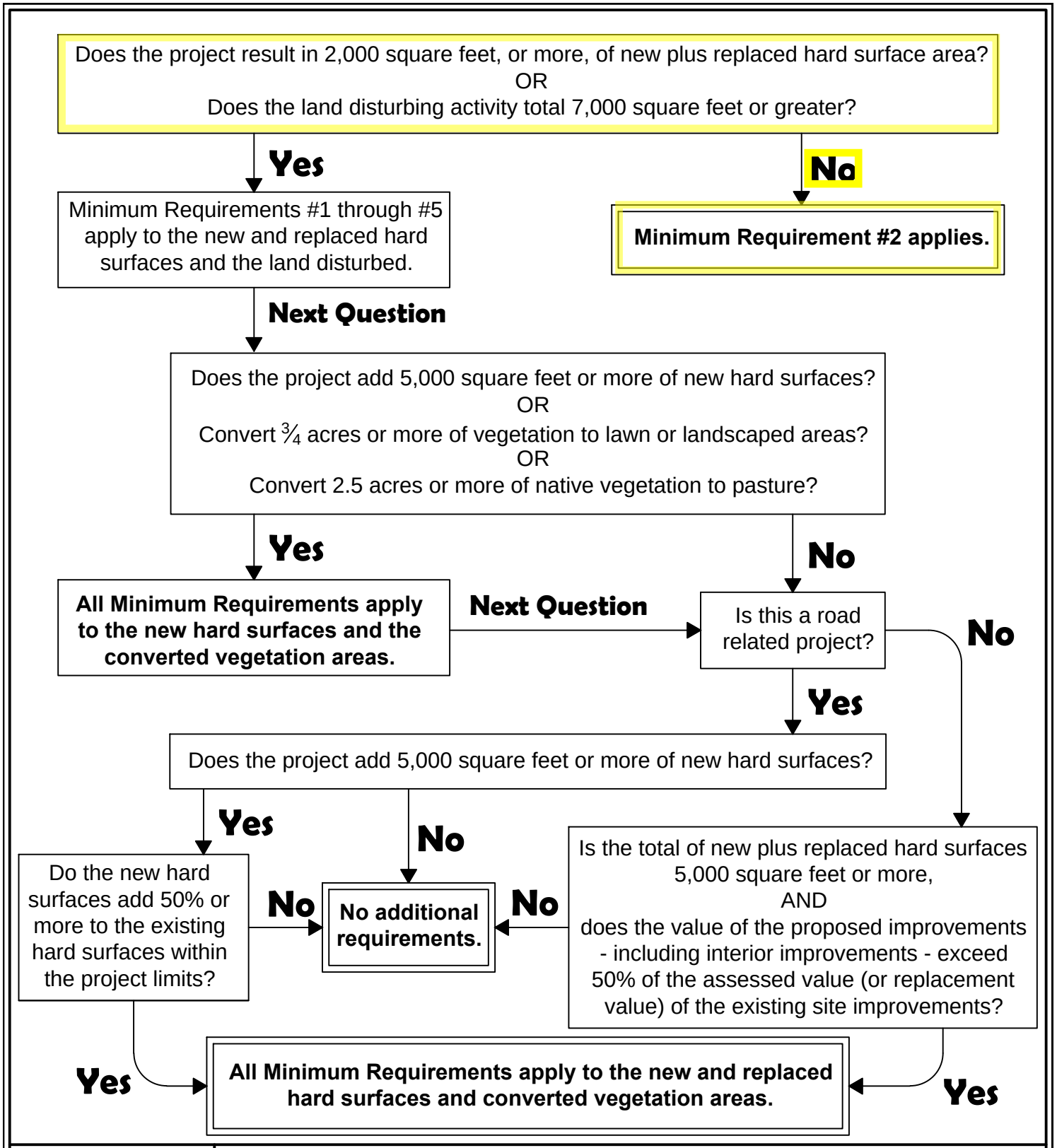



FIGURE 1 - VICINITY MAP
LR RESIDENCE
10.17.2017

CECIL + ASSOCIATES




DEPARTMENT OF ECOLOGY
State of Washington

# Figure I-2.4.2
# Flow Chart for Determining Requirements for Redevelopment



FIGURE 2
LR RESIDENCE
10.17.2017

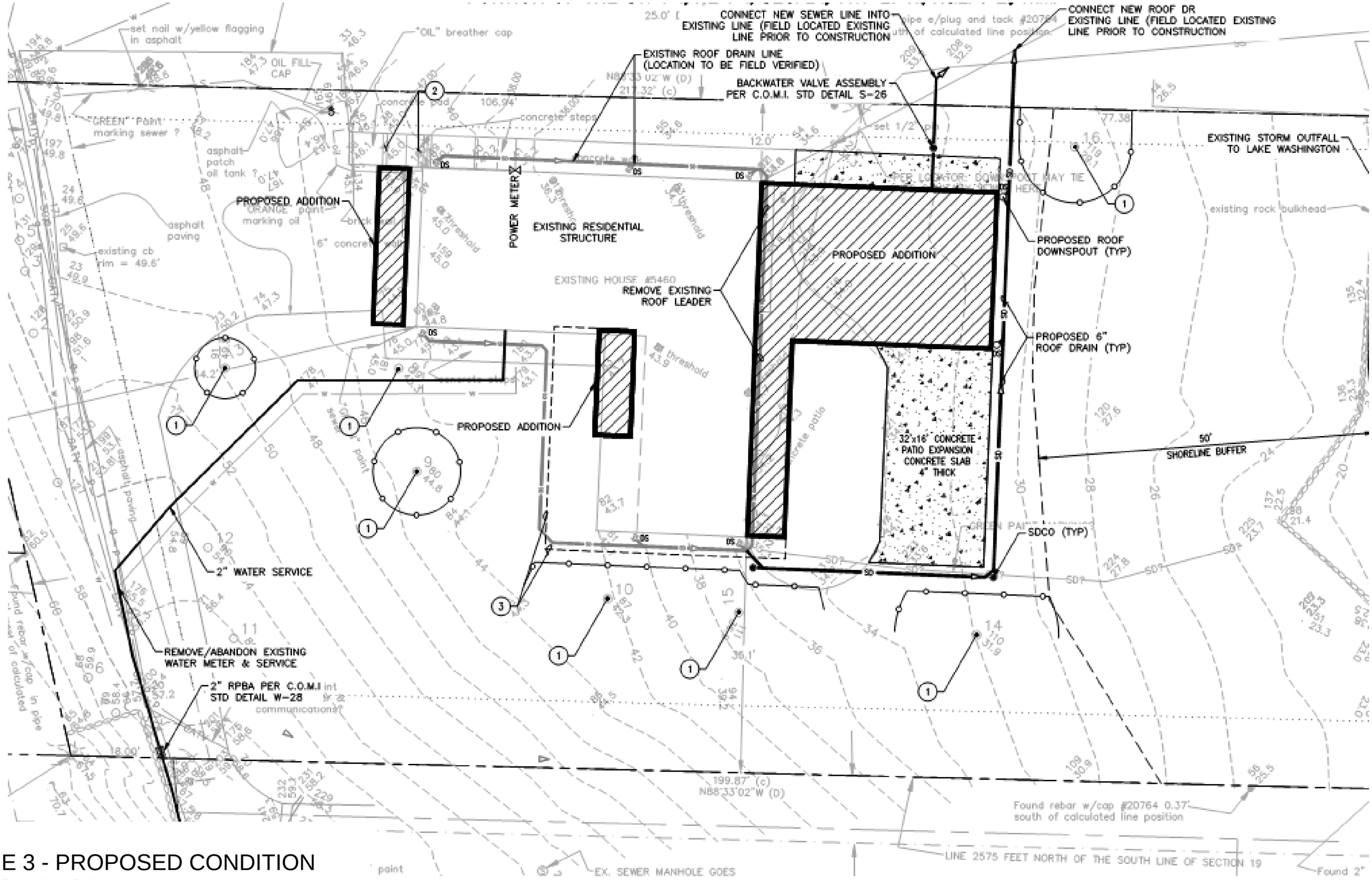



FIGURE 3 - PROPOSED CONDITION
LR RESIDENCE
10.17.2017