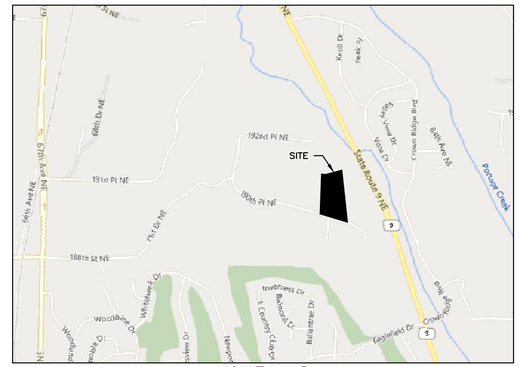
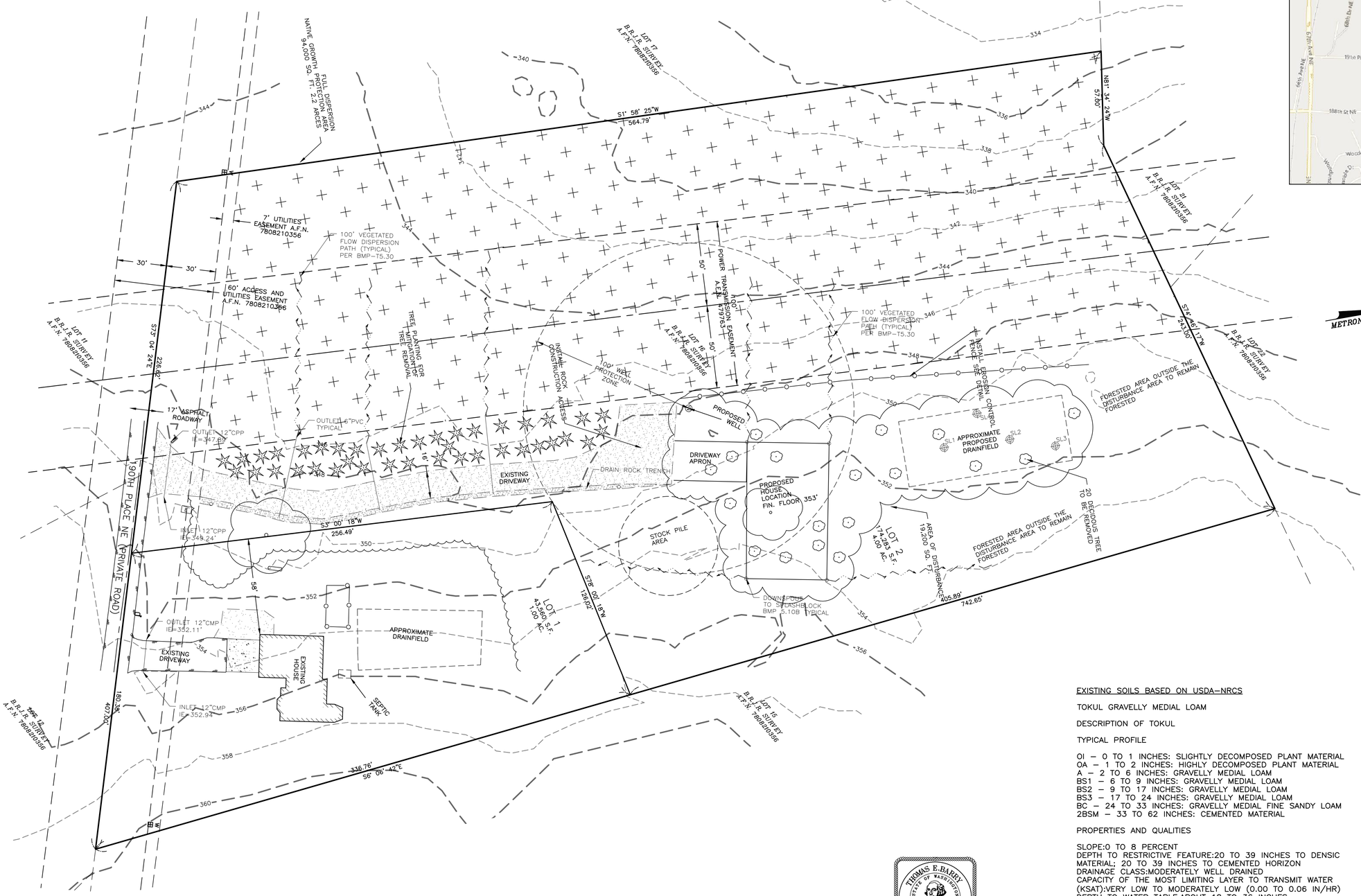
PRELIMINARY SHORT PLAT
FOR DARRIN BRAATEN
CITY OF ARLINGTON FILE NO. _____
SECTION 14, TOWNSHIP 31 NORTH, RANGE 5 EAST



VICINITY MAP
1" = 1000'



METRON

30 0 30

Scale 1" = 30'

CONTOUR INTERVAL = 5'

VEGETATED COVER

BEFORE CONSTRUCTION: SPARSELY FORESTED WOODLAND LOT WITH UNDERSTORY OF SALMONBERRY, FERNS, BLACKBERRY.

AFTER CONSTRUCTION: SPARSELY FORESTED, NATIVE GROWTH, LAWN AND LANDSCAPING.

GRADIING QUANTITIES:

FOUNDATION CUT: 250 CY
GRADING FOR YARD: 250 FILL
BALANCE MATERIALS ON-SITE

AREA OF DISTURBANCE:

19,200 SQ. FT.

FULL DISPERSION CALCULATIONS:

ALLOWABLE DEVELOPMENT

TOTAL SITE AREA: 5 ACRES
ALLOWABLE IMPERVIOUS AREA: 5 ACRES X 10% = 0.5 ACRES OR 21,780 SF
ALLOWABLE PERVIOUS AREA: 5 ACRES X 25% = 1.25 ACRES OR 54,450 SF

PROPOSED DEVELOPMENT

PROPOSED LOT IMPERVIOUS ROOF AREAS: 4,000 SF
PROPOSED DRIVEWAY CONCRETE APRON: 1,100 SF
TOTAL IMPERVIOUS AREA: 5,100 SF < 21,780 SF ALLOWED

PROPOSED PERVIOUS AREAS: 43,560 SF < 54,450 SF ALLOWED
REQUIRED NATIVE GROWTH AREA: 5,100 SF X 6.5 = 33,150 SF OR 0.8 ACRES
PROPOSED NATIVE GROWTH AREA: 2.2 ACRES

EXISTING SOILS BASED ON USDA-NRCS

TOKUL GRAVELLY MEDIAL LOAM

DESCRIPTION OF TOKUL

TYPICAL PROFILE

OI - 0 TO 1 INCHES: SLIGHTLY DECOMPOSED PLANT MATERIAL
OA - 1 TO 2 INCHES: HIGHLY DECOMPOSED PLANT MATERIAL
A - 2 TO 6 INCHES: GRAVELLY MEDIAL LOAM
BS1 - 6 TO 9 INCHES: GRAVELLY MEDIAL LOAM
BS2 - 9 TO 17 INCHES: GRAVELLY MEDIAL LOAM
BS3 - 17 TO 24 INCHES: GRAVELLY MEDIAL LOAM
BC - 24 TO 33 INCHES: GRAVELLY MEDIAL FINE SANDY LOAM
2BSM - 33 TO 62 INCHES: CEMENTED MATERIAL

PROPERTIES AND QUALITIES

SLOPE:0 TO 8 PERCENT
DEPTH TO RESTRICTIVE FEATURE:20 TO 39 INCHES TO DENSIC MATERIAL; 20 TO 39 INCHES TO CEMENTED HORIZON
DRAINAGE CLASS:MODERATELY WELL DRAINED
CAPACITY OF THE MOST LIMITING LAYER TO TRANSMIT WATER (KSAT):VERY LOW TO MODERATELY LOW (0.00 TO 0.06 IN/HR)
DEPTH TO WATER TABLE:ABOUT 18 TO 36 INCHES
FREQUENCY OF FLOODING:NONE
FREQUENCY OF PONDING:NONE
AVAILABLE WATER SUPPLY, 0 TO 60 INCHES: MODERATE (ABOUT 8.7 INCHES)

THOMAS E. BARRY
STATE OF WASHINGTON
28067
REGISTERED
PROFESSIONAL LAND SURVEYOR

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SITE ADDRESS
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REV 04 VSW 1-26-22

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PROJECT:
CITY OF ARLINGTON
2 LOT SHORT PLAT
FOR DARRIN BRAATEN

A PORTION OF SE1/4 OF THE SE1/4 OF
SECTION 14, TOWNSHIP 31 NORTH, RANGE 5 EAST, W.M.
CITY OF ARLINGTON
SNOHOMISH COUNTY, WASHINGTON

SHEET NAME:
STORM DRAINAGE PLAN
CITY OF ARLINGTON FILE NO._____

DRAWN BY: V.S.W.	APPROVED BY: T.E.B. DATE:	PROJECT NO. 21091
DATE: JULY 2021	SCALE: 1" = 20'	
FIELD BOOK: 5-31-	DWG FILE: 21091.DWG	SHEET: 1 OF 2

BMP T5.30: Full Dispersion

Purpose and Definition

This BMP allows for "fully dispersing" runoff from impervious surfaces and cleared areas of Project Sites into areas preserved as forest, native vegetation, or cleared area.

Ecology accepts Full Dispersion as meeting I–3.4.5 MR5: On–Site Stormwater Management, I–3.4.6 MR6: Runoff Treatment, and I–3.4.7 MR7: Flow Control. Sites that can fully disperse are not required to provide additional Runoff Treatment or Flow Control BMPs. Hard surfaces that are not fully dispersed should be partially dispersed to the maximum extent practicable.

Applications and Limitations

The site (or area of the site) that is applying full dispersion per this BMP must be laid out to allow the runoff from the impervious (or cleared) surface to fully disperse into the preserved dispersion area. (i.e. Have full access to and not be intercepted by pipe(s), ditch(es), stream(s), river(s), pond(s), lake (s) or wetland(s)).

Projects that successfully apply this BMP on all or a portion of their site will decrease effective impervious surfaces, and may avoid triggering the TDA Thresholds in I–3.4.7 MR7: Flow Control.

A site (or an area of a site) that applies full dispersion per this BMP consists of the following elements:

- An impervious (or cleared) area. The impervious (or cleared) area is the area that the design is mitigating for by using this BMP.
- A flow spreader. Runoff from the impervious (or cleared) area may need to be routed through a flow spreader (see V–1.4.2 Flow Spreaders), depending on the site layout and type of impervious surface, as further described below.
- A dispersion area. This area defines the limits of the Full Dispersion BMP. The impervious (or cleared) area must disperse into the preserved dispersion area.
  - The dispersion area must be forest, native vegetation, or a cleared area depending on the site type. Details are provided below for amount of vegetation the dispersion area must contain based on site type.
  - If the dispersion area must be preserved as forest or native vegetation, it may be a previously cleared area that has been replanted in accordance with Native Vegetation Landscape Specifications (below).
  - The dispersion area should be situated to minimize the clearing of existing forest cover, to maximize the preservation of wetlands (though the wetland area and any streams and lakes do not count as part of the dispersion area), and to buffer stream corridors.
  - The dispersion area should be placed in a separate tract or protected through recorded easements for individual lots.
  - The dispersion area should be shown on all property maps and should be clearly marked during clearing and construction on the site.
  - All trees within the dispersion area at the time of permit application shall be retained, aside from:
    - dangerous or diseased trees, and
    - approved timber harvest activities regulated under WAC Title 222. Class IV General Forest Practices that are conversions from timberland to other uses are not acceptable for the preserved area.
  - The dispersion area may be used for passive recreation and related facilities, including pedestrian and bicycle trails, nature viewing areas, fishing and camping areas, and other similar activities that do not require permanent structures. Cleared areas and areas of compacted soil associated with these areas and facilities must not exceed eight percent of the dispersion area.
  - The dispersion area may contain utilities and utility easements, but not septic systems. For the purpose of this BMP, utilities are defined as potable and wastewater underground piping, underground wiring, and power and telephone poles.
  - The dispersion area is not allowed in critical area buffers or on slopes steeper than 20%. Dispersion areas proposed on slopes steeper than 15% or within 50 feet of a geologically hazardous area (RCW 36.70A.030(5)) must be approved by a geotechnical engineer or engineering geologist.
  - For sites with on–site sewage disposal systems, the discharge of runoff from the dispersion area must be located downslope of the primary and reserve drainfield areas. This requirement may be waived by the permitting jurisdiction if site topography clearly prevents discharged flows from intersecting the drainfield.
- A flow path through the dispersion area. The length of the flow path from the impervious (or cleared) area through the dispersion area varies based on the site layout and type of impervious surface, as further described below. Regardless of the site layout and type of impervious surface, the flow path must meet the following criteria:
  - The slope of the flow path must be no steeper than 15% for any 20–foot reach of the flow path. Slopes up to 20% are allowed where flow spreaders are located upstream of the dispersion area and at sites where vegetation can be established.
  - The flow paths from adjacent flow spreaders must be sufficiently spaced to prevent overlap of flows in the flow path areas.

The dispersion of runoff must not create flooding or erosion impacts.

Minimum Design Requirements for Residential Projects

Rural single family residential developments should use this BMP wherever possible to minimize effective impervious surfaces.

Full Dispersion from Impervious Surfaces in Residential Projects

Impervious surfaces within residential projects may be "fully dispersed" if they are within a TDA that is less than 10% impervious. If the TDA has more than 10% impervious area, the design may still fully disperse up to 10% of the TDA's area. The impervious areas that are beyond the 10% cannot drain to the dispersion area, and are subject to the thresholds in I–3.4.6 MR6: Runoff Treatment and I–3.4.7 MR7: Flow Control.

The lawn and landscaping areas associated with the impervious area being mitigated may be dispersed into the dispersion area. The lawn and landscaped area must comply with BMP T5.13: Post–Construction Soil Quality and Depth.

The dispersion area must be preserved as forest or native vegetation.

The dispersion area shall have a minimum area 6.5 times the area of the impervious surface draining to it.

The flow path from the impervious surface through the area preserved as forest or native vegetation must be at least 100 feet in length, or 25 feet for sheet flow from lawn and landscaping areas associated with the impervious area being mitigated.

The following additional guidelines must be followed for the following types of impervious surfaces within residential projects:

- Full dispersion from roof surfaces: Runoff from roof surfaces must either:
  - Provide dispersion BMPs as described in BMP T5.10B: Downspout Dispersion Systems prior to the runoff entering the dispersion area. The dispersion area and flow path must meet the criteria described in this BMP.

    or
  - Combine the roof runoff with the road runoff, and follow the guidance for full dispersion from roadway surfaces (below).
- Full dispersion from driveway surfaces: Runoff from driveway surfaces must either:
  - Provide dispersion BMPs as described in BMP T5.11: Concentrated Flow Dispersion and BMP T5.12: Sheet Flow Dispersion prior to the runoff entering the dispersion area. The dispersion area and flow path must meet the criteria described in this BMP.

    or
  - Combine the driveway runoff with the road runoff, and follow the guidance for full dispersion from roadway surfaces (below).
- Full Dispersion from Roadway Surfaces: Runoff from roadway surfaces comply with all of the following requirements:
  - The road section shall be designed to minimize collection and concentration of roadway runoff. Sheet flow over roadway fill slopes (i.e., where roadway subgrade is above adjacent right–of–way) should be used wherever possible to avoid concentration.
  - When it is necessary to collect and concentrate runoff from the roadway and adjacent upstream areas (e.g., in a ditch on a cut slope), concentrated flows shall be incrementally discharged from the ditch via cross culverts or at the ends of cut sections. These incremental discharges of newly concentrated flows shall not exceed 0.5 cfs at any one discharge point from a ditch for the 100–year runoff event. Where flows at a particular ditch discharge point were already concentrated under existing site conditions (e.g., in a natural channel that crosses the roadway alignment), the 0.5–cfs limit would be in addition to the existing concentrated peak flows.
  - Ditch discharge points with up to 0.2 cfs discharge for the peak 100–year flow shall use rock pads or dispersion trenches to disperse flows into the dispersion area. Ditch discharge points with between 0.2 and 0.5 cfs discharge for the 100–year peak flow shall use dispersion trenches to disperse flows into the dispersion area. See V–1.4.3 Outfall Systems for details on rock pads and dispersion trenches.
    - Dispersion trenches shall be designed to accept surface flows (free discharge) from a pipe, culvert, or ditch end, shall be aligned perpendicular to the flowpath, and shall have a minimum 2 feet by 2 cross section, 50 feet in length, filled with 3/4–inch to 1 1/2–inch washed rock, and provided with a level notched grade board. Manifolds may be used to split flows up to 2 cfs discharge for the 100–year peak flow between up to 4 trenches. Dispersion trenches shall have a minimum spacing of 50 feet between centerlines.
  - Where the Local Plan Approval Authority determines there is a potential for significant adverse impacts downstream (e.g., erosive steep slopes or existing downstream drainage problems), dispersion of runoff from roadway surfaces may not be allowed, or other measures may be required.

Full Dispersion from Cleared Areas in Residential Projects

The runoff from cleared areas of residential projects that are comprised of bare soil, non–native landscaping, lawn, and/or pasture is "fully dispersed" if it meets all of the following criteria:

- Cleared areas must comply with BMP T5.13: Post–Construction Soil Quality and Depth.
- The dispersion area must be preserved as forest or native vegetation.
- The flow path through the cleared area (and leading to the dispersion area) must not be greater than 25 feet.
- If the cleared area has a width of up to 25 feet:
  - The minimum flow path length from the cleared area through the dispersion area must be at least 25 feet.
- If the cleared area has a width of 25 to 250 feet:
  - The minimum flow path length from the cleared area through the dispersion area must be 25 feet, plus an additional 1 foot for every 3 feet of width of the cleared area (beyond the initial 25 feet) up to a maximum width of 250 feet.
- The topography of the cleared area must be such that runoff will not concentrate prior to discharge to the dispersion area.
- The width of the dispersion area must equal the width of the cleared area.

BMP T5.10B: Downspout Dispersion Systems

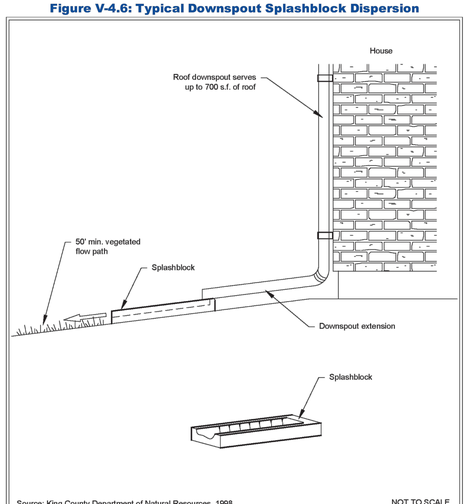
Design Criteria for Splashblocks

A typical downspout splashblock is shown in Figure V–4.6: Typical Downspout Splashblock Dispersion. In general, if the ground is sloped away from the foundation and there is adequate vegetation and area for effective dispersion, splashblocks will adequately disperse storm runoff. If the ground is fairly level, if the structure includes a basement, or if foundation drains are proposed, splashblocks with downspout extensions may be a better choice because the discharge point is moved away from the foundation. Downspout extensions can include piping to a splashblock/discharge point a considerable distance from the downspout, as long as the runoff can travel through a well–vegetated area as described below.

The following apply to the use of splashblocks:

1. Maintain a vegetated flow path of at least 50 feet between the discharge point and any property line, structure, slope steeper than 15%, stream, wetland, lake, or other impervious surface. Sensitive area buffers may count toward flow path lengths.
2. A maximum of 700 square feet of roof area may drain to each splashblock.
3. Place a splashblock or a pad of crushed rock (2 feet wide by 3 feet long by 6 inches deep) at each downspout discharge point.

Figure V-4.6: Typical Downspout Splashblock Dispersion

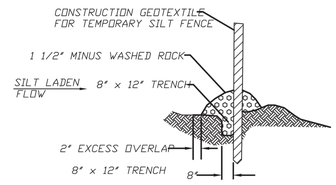


Source: King County Department of Natural Resources, 1998 NOT TO SCALE

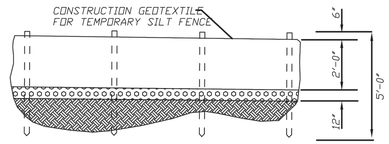
DEPARTMENT OF ECOLOGY State of Washington

Typical Downspout Splashblock Dispersion

Revised December 2016



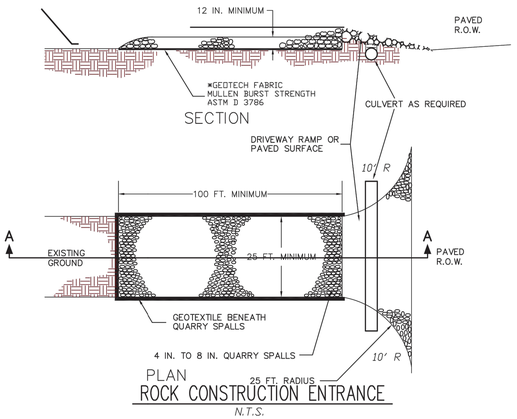
TYPICAL CROSS-SECTION



ELEVATION

N.T.S.

SILT FENCE DETAIL



ROCK CONSTRUCTION ENTRANCE

N.T.S.

REV 00 VSW 4–15–22

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THOMAS E. BARRY — STATE OF WASHINGTON — 28067 — REGISTERED PROFESSIONAL LAND SURVEYOR

PROJECT:
CITY OF ARLINGTON
2 LOT SHORT PLAT
FOR DARRIN BRAATEN

A PORTION OF SE1/4 OF THE SE1/4 OF SECTION 14, TOWNSHIP 31 NORTH, RANGE 5 EAST, W.M.
CITY OF ARLINGTON
SNOHOMISH COUNTY, WASHINGTON

SHEET NAME:
STORM DRAINAGE NOTES
CITY OF ARLINGTON FILE NO._____

DRAWN BY: V.S.W.	APPROVED BY: T.E.B. DATE:	PROJECT NO. 21091
DATE: APRIL 2022	SCALE: 1" = 20'	
FIELD BOOK: 5–31–	DWG FILE: 21091.DWG	SHEET: 1 OF 1