BLUELINE

CITY OF MUKILTEO
Planning and Community Development Department

Received 8/12/22

August 11, 2022

Linda Ritter
City of Mukilteo
11930 Cyrus Way
Mukilteo WA 98275

RE: Harbor Grove – First Review SD-2021-001/ENG-2021-019/SEPA-2021-010
Blueline Job No. 21-073

Dear Ms. Ritter,
This letter is in response to your review of the Harbor Grove project. The plans have been revised per the comments in your letter dated February 17, 2022. Below is a list of each comment with our responses in bold.

Planning

Preliminary Plat Map

1. Site Data
   a. Number of lots proposed: 5 The number of lots being proposed for this development is 7.

      Response: Preliminary Plat Map updated to reflect the proposed number of lots as 7.

   b. Minimum lot size (required): 7,200 sf* *(lot size averaging, see table, min lot size 3,ooo sf) Per the Mukilteo Municipal Code (MMC) 17.20.050 lot size averaging, the following zones are allowed to apply lot size averaging: RD 20.0, RD 12.5(S), RD 9.6(S), RD 8.4, RD 7.2 or WFB. Lot size averaging does not apply to RD 12.5, the zone the proposal is located within.

      Response: Preliminary Plat Map revised to show 12,500 SF as the minimum lot size.

   c. Maximum lot width: 60 feet* *40 feet per SCCC 30.23.210(7) lot size averaging. The reference you provided is for the Snohomish County Code and is not applicable. Minimum lot width for projects within the City of Mukilteo is shown in Table 1: Lot Bulk Matrix MMC 17.20.015 below.

      Response: Preliminary Plat Map updated to meet MCC Table 1: Lot Bulk Matrix for RD 12.5.

   d. Maximum Lot Coverage: 35% Per MMC 17.20.020 Structure Bulk Matrix, the maximum lot coverage allowed in the RD 12.5 zone is 30%.

      Response: Preliminary Plat Map updated to meet MCC Table 1: Lot Bulk Matrix for RD 12.5.

SEPA

1. Section A, Background, Question 11: Revise the project description as the minimum lot size for this proposal is 12,500 square feet.

   Response: Please see revised SEPA project description. The minimum lot size has been updated to 12,500 SF.

2. Section B, Environmental Elements, Question 8(L): Revise your response as this property is not eligible for transfer of density.

   Response: Please see revised response to SEPA question 8(L).

3. Section B, Recreational Use, Question 12(B): Please revise as it should be "recreational" not "residential". "Would the proposed project displace any existing recreational uses? If so, describe. No, the proposal would not displace any existing residential uses. The site is zoned and designated for single family residential use."

   Response: Please see revised answer to SEPA question 12(B). The answer has been updated to clarify that existing recreational uses will not be displaced.

Tract 999 Open Space

1. Tract 999 does not meet the definition of open space. Per MMC 17.08 definitions, open space is defined as follows:

- "Open space, active" means all common space designated and intended for the purposes of recreation and active use, such as parks, plazas, playgrounds, and sport courts.
- "Open space, development" is that part of a lot, or any number of lots or portions thereof, brought together under one development plan for an entire parcel, other than required yards, which:
    - Are free and clear of buildings, structures and paved areas used for automobile parking or vehicular access and to remain open and unobstructed from the ground to the sky; and
    - Are accessible (and made available at all times) to all persons occupying a dwelling unit of the structures located on the lot.
- "Open space, land use" as a use in Table 17.16.040 means those uses such as public parks, private parks, NGPAs, stormwater detention facilities or similar uses that provide wildlife and critical habitat, passive recreational uses, and environmental education activities that are generally free and clear of buildings, structures and paved areas used for automobile parking or vehicular access and to remain open and unobstructed from the ground to the sky.
- "Open space, passive" means all common open space not meeting the definition of active recreational open space, including, but not limited to, critical areas and their associated buffers, and LID facilities.

Tract 999 shall either meet the definition of open space or be removed. Open space is not required for the subdivision as it is currently proposed.

Response: Please see revised civil plans. Tract shall be deeded to neighbor. Tract renamed accordingly.

Engineering

General

1. The City will require all proposed easements shown on the plat, including utility easement, to include access/egress.

   Response: Plans updated to include easement linework and labels, reflecting the proposed design.

Drainage Report

1. Please provide a delineation of the flow paths to show the project is subject to a single threshold discharge area (TDA) as identified in the Drainage Report. If the project has more than one TDA, additional downstream analysis will be required as the proposal will not maintain the natural drainage of the property. Public Comment No(s).: (16)

   Response: Callouts within DS Exhibit added to locate the shortest existing and developed ¼ mile downstream locations. The proposed downstream drainage paths join within a ¼ mile of the shortest existing ¼ mile downstream drainage location, thus, the site results in one threshold discharge area.

2. Please provide a quantitative capacity analysis for the existing drainage systems. Demonstrate that each system has capacity for additional stormwater as proposed.
   a. 92nd Street SW Public Comment No(s).: (5)(6)(12)(15)
   b. 53rd Ave drainage ditch to Smuggler's Gulch Creek Public Comment No(s).: (1)(5)(6)(12)(15)

   Response:
   Onsite Basin Downstream Drainage Path:
   Proposed stormwater design revised to bypass the existing detention pipe located within 92nd St SW, thus, the storm drainage report will continue to provide a qualitative analysis of the existing drainage network along the proposed onsite basin downstream path.

   Frontage Basin Downstream Drainage Path:
   A peak flow analysis has been added to the report comparing existing and developed peak flows tributary to Smuggler's Gulch Creek. The analysis presents quantitative information showing that the proposed 100-year peak flow tributary to the creek will be less than the existing 100-year peak flow. The project is not adding, but reducing flows tributary to

Smuggler's Gulch Creek, thus, will not provide a quantitative capacity analysis of the existing system.

3. All drainage from "Bypass Basin" areas must be evaluated for impact on water quality and quantity. Public Comment No(s).: (2)(3)(4)(5)(6)(7)(8)(9)(10)(11)(12)(13)(14)(15)(16)(17)
   a. Drainage west and south of the French drain to neighboring properties.

      Response: Stormwater design revised to collect runoff from disturbed areas west and south of the originally proposed french drain to avoid surface water runoff to sheet flow to neighboring properties. Stormwater runoff will be collected via an interceptor swale (with french drain) located just east of the wester parcel boundary, routed to a pump structure, and pumped to the proposed detention facility.

   b. Drainage from the northeast corner of the property.
      i. This area is shown on the November submittal as a bypass that sheet flows to the City's right-of-way. This stormwater must be accounted for within the private system. Please address stormwater from this area and update the Drainage Plan and Report. Evaluate capacity of storm systems as appropriate.

      Response: Majority of bypass area located in Lots 1-3 will remain undisturbed and will be set aside by a Preserved Native Vegetative Area Easement. According to Figure I-3.1 in the 2019 SWMMWW, "All Minimum Requirements apply to the new and replaced hard surfaces and converted vegetation areas". Areas left unconverted do not need to meet water quality and quantity requirements, thus, not included in the drainage analysis. The remaining

Geotechnical Engineering Study

1. The Geotechnical Study conducted on June 21, 2021 only evaluates on site, summer conditions. Properties downhill and adjacent to the proposed project (Hargreaves Place, Surrey Lane, 92nd Street SW) have a history with surface water runoff, groundwater expression, and property flooding. Further analysis shall be required to better observe off site conditions and project impacts. As this Study was completed over summer months and reported no groundwater seepage, further evaluation shall be required to observe seasonal fluctuations. The evaluation must demonstrate how surface and ground water will move through the site to the proposed wall footing drains and assess existing and proposed conditions. Public Comment No(s).: (2)(3)(4)(5)(6)(7)(8)(9)(10)(11)(12)(13)(14) (15)(16)(17)

   Response: Further analysis has been provided in the Groundwater Elevation Evaluation by Cobalt Geosciences, LLC dated March 14, 2022 included under separate cover.

2. The Geotechnical Study - Project Description list the site as one tax parcel on 1.33 acres of land area. The Project Overview in the Drainage Report lists the project as a single 2.43-acre parcel

with 0.05 acres of dedicated right-of-way, leaving 2.38-acres post-dedication. Please clarify the correct size of the project in all submittal documents. Public Comment No(s).: (12)

Response: Geotechnical Study prepared by Earth Solutions NW, LLC revised to show correct size of project. Document provided under separate cover.

3. Drainage from stormwater "Bypass Basin" areas are not considered in the Study and must be evaluated. Public Comment No(s).: (12)

Response: Site design revised to greatly reduce the effective bypass basin. Remaining bypass area is not directly tributary to neighboring properties, thus, not needed to be included in the Geotechnical Study.

Civil Plans

1. Cover Sheet
   a. Site Data section indicates the number of lots proposed as 5. Please correct this to match the 7 Lot proposal.

      Response: CV-01 updated to show correct amount of lots proposed.

2. Drainage Plan
   a. 53rd Ave W Frontage
      i. 53rd Ave W has been identified as a far-term project on the City's Bike Transit Walk (BTW) Plan as adopted in March 2017. The plan proposes for a 7-10' rain garden along the west frontage of 53rd between 88th Street and 92nd Street. The current proposal does not show the rain garden along the duration of the frontage. Please include the rain garden as part of the frontage improvements or provide an alternative. Public Comment No(s).: (16)

         Response: The frontage improvements shown on Sheet RP-01 matches the Right-of-Way section required per the City's Bike Transit Walk (BTW) Plan as adopted in March 2017 and City of Mukilteo Rain Garden - Section - Standard Plan No. SW-048.

   b. Northeast Property Drainage
      i. Drainage must not be directed to sheet flow into the City's right-of-way/ditch. Please address stormwater from this area to the private system and update the Drainage Plan as applicable.

         Response: Majority of bypass area located in Lots 1-3 will remain undisturbed and will be set aside by a Preserved Native Vegetative Area Easement. According to Figure I-3.1 in the 2019 SWMMWW, "All Minimum Requirements apply to the new and replaced hard surfaces and converted vegetation areas". Bypass areas left unconverted do not

need to meet water quality and quantity requirements, thus, not included in the drainage analysis. The remaining 0.02-acres of onsite bypass is unable to be collected due to raising Lot 1 pad to allow the future lot storm system to drain to vault. A peak flow analysis has been added to the report comparing existing and developed peak flows tributary to Smuggler's Gulch Creek. The analysis presents quantitative information showing that the proposed 100-year peak flow tributary to the creek will be less than the existing 100-year peak flow.

c. Retaining Wall and Footing Drains
   i. There is not adequate dispersion or flow path for the retaining wall footing drains. The footing drains as proposed will discharge to adjacent properties. Public Comment No(s).: (16)
      1. A flow path between the discharge point and any property line, structure, steep slope, or other impervious surface is required or an alternative (sump pump to bypass the vault, etc.) shall be proposed. Public Comment No(s).: (12)

         Response: Stormwater design revised to collect runoff from disturbed areas west and south of the originally proposed french drain to avoid surface water runoff to sheet flow to neighboring properties. Stormwater runoff will be collected via an interceptor swale (with french drain) located just east of the wester parcel boundary, routed to a pump structure, and pumped to the proposed detention facility. The pump is designed to convey the 25-year peak flow tributary to it and can handle the 100-year peak flow. The project is not required to provide a flow path for a storm exceeding the 100-year peak flow.

         i. An easement that satisfies MMC 13.12.160.F.2 will be required if the flow path is built on a property owned by a different private party.

            Response: Stormwater design revised to collect runoff from disturbed areas west and south of the originally proposed french drain to avoid surface water runoff to sheet flow to neighboring properties. Stormwater runoff will be collected via an interceptor swale (with french drain) located just east of the wester parcel boundary, routed to a pump structure, and pumped to the proposed detention facility. The pump is designed to convey the 25-year peak flow tributary to it and can handle the 100-year peak flow. The project is not required to provide a flow path for a storm exceeding the 100-year peak flow.

         ii. Further evaluation is required for the retaining wall discharge area. The evaluation must account for all interflow and groundwater that will be intercepted from the entire project area and surface water from bypass area. Public Comment No(s).: (12)

Response: See response provided by Earth Solutions NW LLC dated August 4, 2022 enclosed at the end of this comment response letter. The assumed flow of 0.5 gpm (0.001 cfs) tributary to wall drain during peak wet season will not adversely affect proposed conveyance system.

iii. The proposed walls and French drain span several lots and tracts. Demonstrate how will these be accessed for maintenance and provide a legal mechanism for long term maintenance. Separate tracts and/or easements may be required. Public Comment No(s).: (5)

Response: Plans updated to propose a variable width private drainage and maintenance access easement to encompass walls and storm system traversing across multiple lots.

iv. Please provide detailed drawings of the proposed retaining walls and drains. Per MDS 2.1.2.1-Construction of any rockery or modular block wall (retaining wall) over 4 feet in height, or a wall of any height where soil is unstable, or which supports a structural load/has a surcharge requires a clearing and grading permit. For determining a wall's height, the measurement is taken from the base/foundation of the retaining wall to the top of the wall. There is no height restriction on the height of the wall. Public Comment No(s).: (5)(2)(16)(6)(9)(11)

Response: Coordination has been made with the geotechnical engineer in providing detailed drawings of the proposed retaining walls and drains. Details will be submitted with the retaining wall clearing and grading permit when obtained.

v. Portions of the proposed walls appear to be within the setback. Please verify setback requirements.

Response: Walls relocated to the east to meet setback requirements listed under MMC 15-16.140.

d. Combined Detention Wet Vault
   i. Per 2014 Department of Ecology SWMM access must be provided over vault inlet and outlet structures.
      1. Access openings must be a maximum of 50 feet from any location within the tank. Additional access points may be needed on large vaults.
      2. Vaults with greater than 1,250 square feet of floor area, provide a 5' by 10' removable panel over the inlet pipe.
      3. Vaults must comply with the OSHA confined space requirements, which includes clearly marking entrances to confined space areas.

Response: Access openings called out on VT-01.

ii. Drawing A-A of Cell 1 Cross Section

1. Inlet from CB5 is not shown.

   Response: Inlet from CB5 shown on VT-01.

2. Flow restrictor shown on drawing refers to Sheet VT-02 for detail. This sheet is not included.

   Response: Reference remains. VT-02 added to plans.

3. The submerged inlet pipes from CB5, CB7 and Lots 1, 2, 3 are all at the same elevation as the top of sediment storage (389.90). Should the inlets have clearance above the top of sediment storage to prevent sediment from backing up? See Figure V-10.3.6 Wet Vault.

   Response: Inlets relocated per Section XXXXX 2019 SWMMWW.

e. French Drain

i. How was the French drain size calculated? Does it include capacity for groundwater/interflow? Public Comment No(s).: (5)

Response: French drain has been relocated in revised plan submittal. French drain is sized for surface water runoff. Sizing of french drain included in report. Groundwater appears to be at an elevation of 375 feet according to the Groundwater Elevation Evaluation by Cobalt Geosciences, LLC dated March 14, 2022 included under separate cover. The lowest portion of the bottom of french drain is located around 377 feet. That leaves 2 feet between french drain invert elevation and groundwater elevation.

It is not anticipated that the french drain will collect much interflow similar to retaining wall footing drains. See response provided by Earth Solutions NW LLC dated August 4, 2022 enclosed at the end of this comment response letter.

3. Road Plan

a. The Private Street standard shall follow MMC 17.54 and the 2019 Mukilteo Development Standards (MDS) 4.6.

Response: Proposed private street section revised to follow MMC 17.54 and the 2019 Mukilteo Development Standards (MDS) 4.6.

b. The driveway serving Lots 4 & 5 shall meet MDS 4.6.5.5:
   i. Have a minimum width of 16’ and a maximum width of 30’.
   ii. Be located within a private easement or tract for ingress and egress that is at least four feet wider than the provided pavement width.
   iii. Have a binding private maintenance covenant/agreement, reviewed and approved by the City prior to recording of the document, to provide constructive notice to subsequent purchasers of their obligation to maintain these private facilities as well as the methods to be used in maintaining the private facilities.

   Draft private maintenance covenant language has been provided on Sheet SP-01 under “Drainage Facility Maintenance Note”.

c. Centered within a private easement or tract for ingress and egress.

   Response: Site plan revised to show driveway widths ranging between 16’ and 30’. Easement providing ingress and egress for Lots 5 & 6 is 4 feet wider than the provided pavement width. Access within easement centered.

4. TESC Plan
   a. Please include detail drawings of the temporary sediment trap showing top and bottom elevations. Public Comment No(s).: (6)(11)

      Response: Temporary sediment trap detail added to Sheet TD-01 with top and bottom elevations.

   b. Please evaluate how stormwater will be managed during construction prior to the installation of the wet vault. Public Comment No(s).: (16)

      Response: TESC plan revised to show 2-phases of construction. Prior and post to detention/wetvault construction. Construction sequence added to TD-01.

   c. The city will require a performance surety for the erosion control measures per MMC 13.12.170(A). Templates for performance bond, cash deposit, or frozen fund sureties are available on the Online Permit Portal at: https://ci-mukilteo-wa.smartgovcommunity.com/Public/DocumentsView

      Response: To reduce amount of iterations, a performance surety for the erosion control measures will be provided at a later time, prior to permit issuance.

5. Tree Retention Plan
   a. The tree retention plan shall show trees drawn to scale, as required in code (showing full drip line). Public Comment No(s).: (2)(3)(5)(12)

Response: Driplines have been added to trees on sheet TR-01.

b. The tree retention plan on Sheet TR-01 indicates 5 retained trees with retaining walls built within their driplines. A tree retention plan showing any significant trees that shall be retained or removed. The applicant shall also identify limits of full tree dripline of the canopy and limits of critical root zones. The plan shall identify measures to be taken to protect trees during construction such as fencing of trees and avoiding disturbance of critical root zones. Tree retention plans shall also identify how requirements set in Section 15.16.050C.2.a are met, when applicable.

Response: Arborist report has been updated to identify measures that will be taken to protect trees during construction when grading occurs withing its dripline.

c. One tree (a 14" fir) is in the city's ROW and cannot be counted as retained on the property.

Response: This tree has been excluded from the calculations.

Engineering Items for Resubmittal

1. Revised Civil Plan set. **Included.**
2. Revised Geotechnical Report. **Included.**
3. Draft language for city stormwater access easement and covenant for maintenance of stormwater facilities. **See draft notes on Sheet SP-01 of Civil Plan set.**
4. Draft language for any private stormwater easement documents that may be necessary. **See draft notes on Sheet SP-01 of Civil Plan set.**
5. Documents showing maintenance responsibility for existing driveway easement. **See notes on Sheet SP-01 of Civil Plan set.**
6. Structural calculations for the stormwater wet vault (may be deferred to after Notice of Decision). **Deferred.**
7. A hydrology report for clearing on slopes greater than 35% is required by MMC 15.16.050.C.2.b.i(b). There appears to be slopes greater than 35% along the southern perimeter of the property. The report must satisfy the requirements of MMC 15.16.060.D.6 and D7. Public Comment No(s).: (12)(16) **See memo attached at the end of this comment response letter.**
8. A Stormwater Water Pollution Prevention Plan completed in accordance with the COM Development Standards and the Washington State Department of Ecology SWMM. Public Comment No(s).: (5) **Provided under separate cover.**
9. Documentation of a Notice of Intent from the Washington State Department of Ecology for a Construction Stormwater General Permit. **Provided under separate cover.**

Draft Engineering Permit Conditions

1. Identification of plat maintenance responsibilities for the private road, wet vault, retaining wall, French drain, and storm infrastructure. Public Comment No(s).: (5)(6)(12)(13)(16) **See draft notes on Sheet SP-01.**
2. The City requires a performance guarantee, at a rate of one hundred fifty percent (150%) of the cost of construction, to cover the construction costs of proposed public improvements. The city will require an estimated construction cost for the ROW improvements. This estimate will be reviewed, and a performance bond will be required before permit issuance. **Bond to be provided before permit issuance.**
3. The City requires a maintenance guarantee, at a rate of fifteen percent (15%) of the construction costs for public improvements. The maintenance guarantee is required for a period of two (2) years and is for the guarantee of maintenance and operation of public improvements. The maintenance guarantee is required prior to project final approval. **Bond to be provided before project final approval.**
4. Per Short Plat recording 9205200691 / 9205205003 there is a 20' wide by 70' long access easement to benefit lot 2 that will need to remain for access. With this easement will lot 2 be partially responsible for TRACT 998 maintenance. Public Comment No(s).: (17) **Parcel #9205205003 will not be partially responsible for Tract 998 maintenance.**
5. Structural calculations for stormwater vault to be approved by Public Works Director. **Structural plans and calculations will be provided under a separate permit.**
6. The city will require an erosion control bond the document is available on the City's Online Permit Portal at: https://ci-mukilteo-wa.smartgovcommunity.com/Public/DocumentsView/Download/4dc59d7b-6854-49ed-8643-ae1c000f46b8 **Bond to be provided before permit issuance.**

Please call or email me with any concerns at 425-250-7230 or tcolleran@thebluelinegroup.com.

Sincerely,

Thomas P. Colleran

TC Colleran, PLA AICP
Project Manager

CC: Briana Quesnoy (briana@perklsproperties.com)
Enclosures: Memo - Comment Response to Hydrology Report Requirement

BLUELINE

August 1, 2022

City of Mukilteo
Matthew Geiger
Surface Water Technician
11930 Cyrus Way
Mukilteo, WA 98275

RE: Harbor Grove – Comment Response to Hydrology Report Requirement
Permit No. ENG-2021-019
Blueline Job No. 21-073

Dear Mr. Geiger:

The following letter is provided in response to a City of Mukilteo engineering comment with regards to the project Harbor Grove, permit ENG-2021-019. The project proposes subdividing the existing parcel into 7 single-family lots, an access/utility tract, and a tract to be deeded to Parcel #00611600015902. Proposed improvements include construction of private access and utility services. Access to the project will be provided via 53rd Ave W. See Sheet CU-01 for a utility site plan provided at the end of this letter.

Per Comment #7 on Page 8 of the City of Mukilteo review letter dated February 17, 2022, a "hydrology report for clearing on slopes greater than 35% is required by MMC 15.16.050.C.2.b.i(b). There appears to be slopes greater than 35% along the southern perimeter of the property. The report must satisfy the requirements of MMC 15.16.060.D.6 and D7. Public Comment No(s).: (12)(16)." Code language from MMC 15.16.050.C.2.b and i.(b) is provided as follows:

> i. "Applications for clearing and grading on slopes in excess of thirty-five percent shall be accepted in those cases where tree removal is limited to pruning (provided survival is assured). Clearing or grading on slopes in excess of thirty-five percent may be allowed upon prior review and approval by the permit authority, to the extent permitted by this subsection (C)(2)(b). In addition to any other information that may be required, the applicant shall provide the following:
>
> (b) Hydrology Report. The investigation and report shall be prepared by a qualified professional hydrologist acceptable to the city. This report shall include an adequate description of the hydrology of the site, conclusions and recommendations regarding the effect of hydrologic conditions on the proposed development and options and recommendations covering the carrying capabilities of the sites to be developed."

<u>Justification</u>

We believe that MMC 15.16.050.C.2.b.i(b) does not apply to the subject project. Refer to Exhibit A (attached on the following pages) for a slope map delineating the existing slopes that exceed 35% to be cleared in the developed condition.

The project proposes to fill and flatten majority of the parcel. Onsite runoff will be collected and conveyed via a tightlined system, ultimately discharging to the storm system within 92nd St SW. Existing onsite slopes exceeding 35% within the project's clearing limits will be regraded to be less than 35%, stabilized, and revegetated utilizing Post-Construction Soil Quality and Depth per BMP T5.13 of the 2019 Stormwater Management Manual for Western Washington. A copy of BMP T5.13 is included at the end of this letter. Existing onsite slopes exceeding 35% will remain undisturbed in the developed condition.

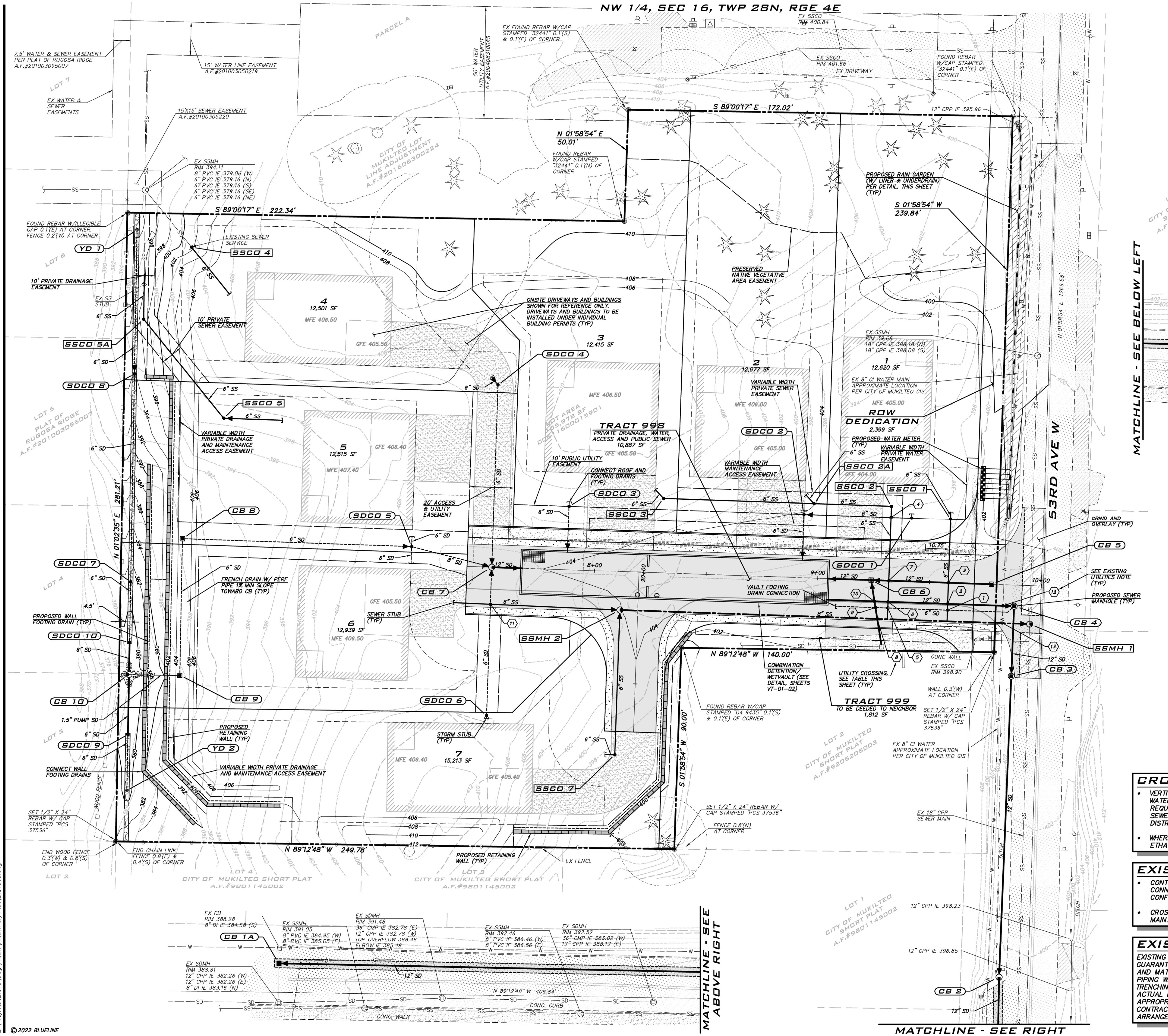
Based on the information provided, the proposed grading and drainage design is anticipated to provide an improved onsite management of stormwater flow.

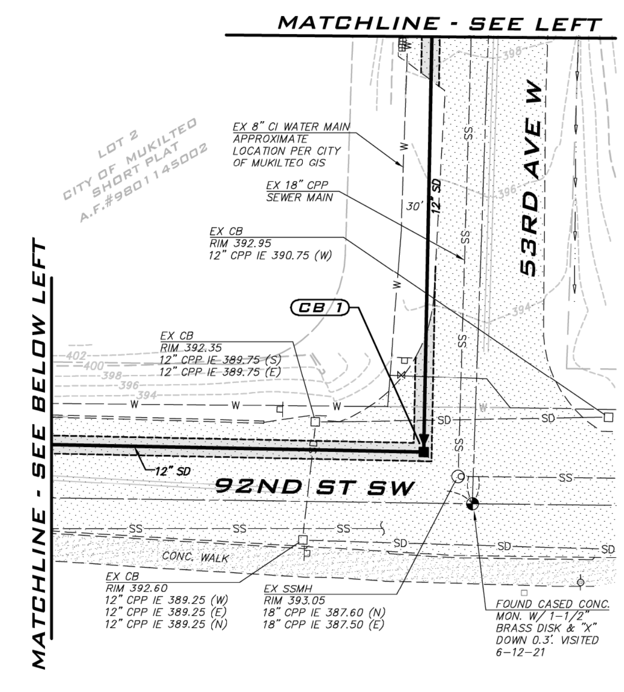
We appreciate your review of this comment response. Please feel free to call me with any questions at (425) 250-7223.

Sincerely,

Lucas Zirotti, EIT

Enclosures: (Sheet CU-01, Exhibit A, and BMP T5.13)
CC: Brett Pudists (bpudists@theblueline group.com)





N

SCALE: 1" = 20'

0 10 20 40

UTILITY CROSSING TABLE

NO.	PIPE ELEVATIONS (FT)		CLEARANCE (FT)
1	6" SD	IE 395.23	4.07
	6" SS	CE 391.16	
2	12" SD	IE 392.60	1.14
	6" SS	CE 391.46	
3	12" SD	IE 399.33	6.86
	6" SS	CE 392.47	
4	6" SD	IE 401.11	5.55
	6" SS	CE 395.56	
5	6" SD	IE 397.21	5.23
	6" SS	CE 391.98	
6	12" SD	IE 392.75	0.52
	6" SS	CE 392.23	
7	12" SD	IE 399.08	6.03
	6" SS	CE 393.05	
8	12" SD	IE 399.94	8.15
	8" SS	CE 391.79	
9	12" SD	IE 399.67	1.55
	6" SD	CE 398.12	
10	12" SD	IE 399.52	5.74
	12" SD	CE 393.78	
11	6" SS	IE 398.00	1.54
	6" SD	CE 396.46	
12	EX 8" WA	IE 398.14	4.67
	12" SD	CE 393.47	
13	EX 8" WA	IE 399.32	9.47
	8" SS	CE 389.85	

CROSSING NOTES

- VERTICAL CLEARANCE FOR CROSSINGS WITH WATER MAINS PER MUKILTEO WATER AND WASTEWATER DISTRICT STANDARDS. MINIMUM 18" OF SEPARATION REQUIRED FOR CROSSINGS WITH WATER AND SANITARY SEWER. REFER TO SEWER AND WATER PLANS PREPARED FOR MUKILTEO WATER AND WASTEWATER DISTRICT (UNDER SEPARATE COVER)
- WHERE VERTICAL CLEARANCE IS LESS THAN 1'. CONTRACTOR SHALL PROVIDE ETHA-FOAM PAD.

EXISTING UTILITIES NOTE

- CONTRACTOR TO VERIFY LOCATION OF EX UTILITIES AT POINT OF CROSSING OR CONNECTION PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF RECORD IF CONFLICTS ARISE.
- CROSSINGS WERE DETERMINED ASSUMING 3' OF COVER OVER EXISTING WATER MAIN.

EXISTING UTILITY NOTE

EXISTING UTILITIES ARE SHOWN IN THE APPROXIMATE LOCATION. THERE IS NO GUARANTEE THAT ALL UTILITY LINES ARE SHOWN, OR THAT THE LOCATION, SIZE AND MATERIAL IS ACCURATE. THE CONTRACTOR SHALL UNCOVER ALL INDICATED PIPING WHERE CROSSING, INTERFERENCES, OR CONNECTIONS OCCUR PRIOR TO TRENCHING OR EXCAVATION FOR ANY PIPE OR STRUCTURES, TO DETERMINE ACTUAL LOCATIONS, SIZE AND MATERIAL. THE CONTRACTOR SHALL MAKE THE APPROPRIATE PROVISION FOR PROTECTION OF SAID FACILITIES. THE CONTRACTOR SHALL NOTIFY ONE CALL AT 8-1-1 (WASHINGTON811.COM) AND ARRANGE FOR FIELD LOCATION OF EXISTING FACILITIES BEFORE CONSTRUCTION.

BLUELINE
25 CENTRAL WAY, SUITE 400, KIRKLAND, WA 98033
P: 425.216.4051 F: 425.216.4052
WWW.THEBLUELINEGROUP.COM

SCALE: AS NOTED
PROJECT MANAGER: T.C. COLLERAN, PLA, AICP
PROJECT ENGINEER: LUCAS ZIROTTI
DESIGNER: LEE M. TOMKINS
ISSUE DATE: 7/29/21

REVISIONS

NO	DATE	BY	REVISIONS
1	8/9/22	LCZ	REVISIONS PER CITY 1ST ROUND COMMENTS

COMPOSITE UTILITY PLAN

HARBOR GROVE

CIVIL PLANS
9110 53RD AVE W
SNOHOMISH COUNTY WASHINGTON

BRETT K. PUDISTS STATE OF WASHINGTON 37925 REGISTERED PROFESSIONAL ENGINEER

8/9/22

JOB NUMBER: 21-073
SHEET NAME: CU-01
SHT 10 OF 21

24x36
Aug 09, 2022 – 5:33pm – User lzirotti
E:\Projects\21073\Dwg\Prelim\Preliminary Plat\21073CU.dwg

NW 1/4, SEC 16, TWP 28N, RGE 4E

N

SCALE: 1" = 20'
0 10 20 40

LEGEND
ONSITE SLOPES GREATER THAN 35% WITHIN CLEARING LIMITS

EXISTING UTILITY NOTE
EXISTING UTILITIES ARE SHOWN IN THE APPROXIMATE LOCATION. THERE IS NO GUARANTEE THAT ALL UTILITY LINES ARE SHOWN, OR THAT THE LOCATION, SIZE AND MATERIAL IS ACCURATE. THE CONTRACTOR SHALL UNCOVER ALL INDICATED PIPING WHERE CROSSING, INTERFERENCES, OR CONNECTIONS OCCUR PRIOR TO TRENCHING OR EXCAVATION FOR ANY PIPE OR STRUCTURES, TO DETERMINE ACTUAL LOCATIONS, SIZE AND MATERIAL. THE CONTRACTOR SHALL MAKE THE APPROPRIATE PROVISION FOR PROTECTION OF SAID FACILITIES. THE CONTRACTOR SHALL NOTIFY ONE CALL AT 8-1-1 (WASHINGTON811.COM) AND ARRANGE FOR FIELD LOCATION OF EXISTING FACILITIES BEFORE CONSTRUCTION.

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SCALE: AS NOTED
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DESIGNER: LEE M. TOMKINS
ISSUE DATE: 7/28/22

REVISIONS

NO	DATE	BY

EXHIBIT A: DEVELOPED CONDITIONS SLOPE MAP

HARBOR GROVE

CIVIL PLANS

9110 53RD AVE W

SNOHOMISH COUNTY WASHINGTON

BRENT K. PUDIST
STATE OF WASHINGTON
37925
REGISTERED PROFESSIONAL ENGINEER

8/1/22

JOB NUMBER: 21-073
SHEET NAME: EX-A
SHT 1 OF 1

24×36
Aug 01, 2022 - 4:47pm - User Ipath
P:\Projects\21073\Dwg Prelim Exhibits\Slope Disturbance Exhibits\21073 Developed Condition Slope Map.dwg

BMP T5.13: Post-Construction Soil Quality and Depth

Purpose and Definition

Naturally occurring (undisturbed) soil and vegetation provide important stormwater functions including: water infiltration; nutrient, sediment, and pollutant adsorption; sediment and pollutant biofiltration; water interflow storage and transmission; and pollutant decomposition. These functions are largely lost when development strips away native soil and vegetation and replaces it with minimal topsoil and sod. Not only are these important stormwater functions lost, but such landscapes themselves become pollution generating pervious surfaces due to increased use of pesticides, fertilizers and other landscaping and household/industrial chemicals, the concentration of pet wastes, and pollutants that accompany roadside litter.

Establishing soil quality and depth regains greater stormwater functions in the post development landscape, provides increased treatment of pollutants and sediments that result from development and habitation, and minimizes the need for some landscaping chemicals, thus reducing pollution through prevention.

Applications and Limitations

Establishing a minimum soil quality and depth is not the same as preservation of naturally occurring soil and vegetation. However, establishing a minimum soil quality and depth will provide improved on-site management of stormwater flow and water quality.

Soil organic matter can be attained through numerous materials such as compost, composted woody material, biosolids, and forest product residuals. It is important that the materials used to

meet this BMP be appropriate and beneficial to the plant cover to be established. Likewise, it is important that imported topsoils improve soil conditions and do not have an excessive percent of clay fines.

This BMP can be considered infeasible on till soil slopes greater than 33 percent.

Design Guidelines

Soil Retention

Retain, in an undisturbed state, the duff layer and native topsoil to the maximum extent practicable. In any areas requiring grading, remove and stockpile the duff layer and topsoil on site in a designated, controlled area, not adjacent to public resources and critical areas, to be reapplied to other portions of the site where feasible.

Soil Quality

All areas subject to clearing and grading that have not been covered by impervious surface, incorporated into a drainage facility or engineered as structural fill or slope shall, at project completion, demonstrate the following:

1. A topsoil layer with a minimum organic matter content of 10% dry weight in planting beds, and 5% organic matter content in turf areas, and a pH from 6.0 to 8.0 or matching the pH of the undisturbed soil. The topsoil layer shall have a minimum depth of eight inches except where tree roots limit the depth of incorporation of amendments needed to meet the criteria. Subsoils below the topsoil layer should be scarified at least 4 inches with some incorporation of the upper material to avoid stratified layers, where feasible.
2. Mulch planting beds with 2 inches of organic material.
3. Use compost and other materials that meet the following organic content requirements:
    a. The organic content for "pre-approved" amendment rates can be met only using compost meeting the compost specification for BMP T7.30: Bioretention, with the exception that the compost may have up to 35% biosolids or manure.

       The compost must also have an organic matter content of 40% to 65%, and a carbon to nitrogen ratio below 25:1.

       The carbon to nitrogen ratio may be as high as 35:1 for plantings composed entirely of plants native to the Puget Sound Lowlands region.

    b. Calculated amendment rates may be met through use of composted material meeting (a.) above; or other organic materials amended to meet the carbon to nitrogen ratio requirements, and not exceeding the contaminant limits identified in Table 220-B, Testing Parameters, in WAC 173-350-220.

The resulting soil should be conducive to the type of vegetation to be established.

Implementation Options

The soil quality design guidelines listed above can be met by using one of the methods listed below:

1. Leave undisturbed native vegetation and soil, and protect from compaction during construction.
2. Amend existing site topsoil or subsoil either at default "pre-approved" rates, or at custom calculated rates based on tests of the soil and amendment.
3. Stockpile existing topsoil during grading, and replace it prior to planting. Stockpiled topsoil must also be amended if needed to meet the organic matter or depth requirements, either at a default "pre-approved" rate or at a custom calculated rate.
4. Import topsoil mix of sufficient organic content and depth to meet the requirements.

More than one method may be used on different portions of the same site. Soil that already meets the depth and organic matter quality standards, and is not compacted, does not need to be amended.

Planning/Permitting/Inspection/Verification Guidelines & Procedures

Local governments are encouraged to adopt guidelines and procedures similar to those recommended in *Building Soil: Guidelines and Resources for Implementing Soil Quality and Depth BMP T5.13 in WDOE Stormwater Management Manual for Western Washington* (Stenn et al., 2016).

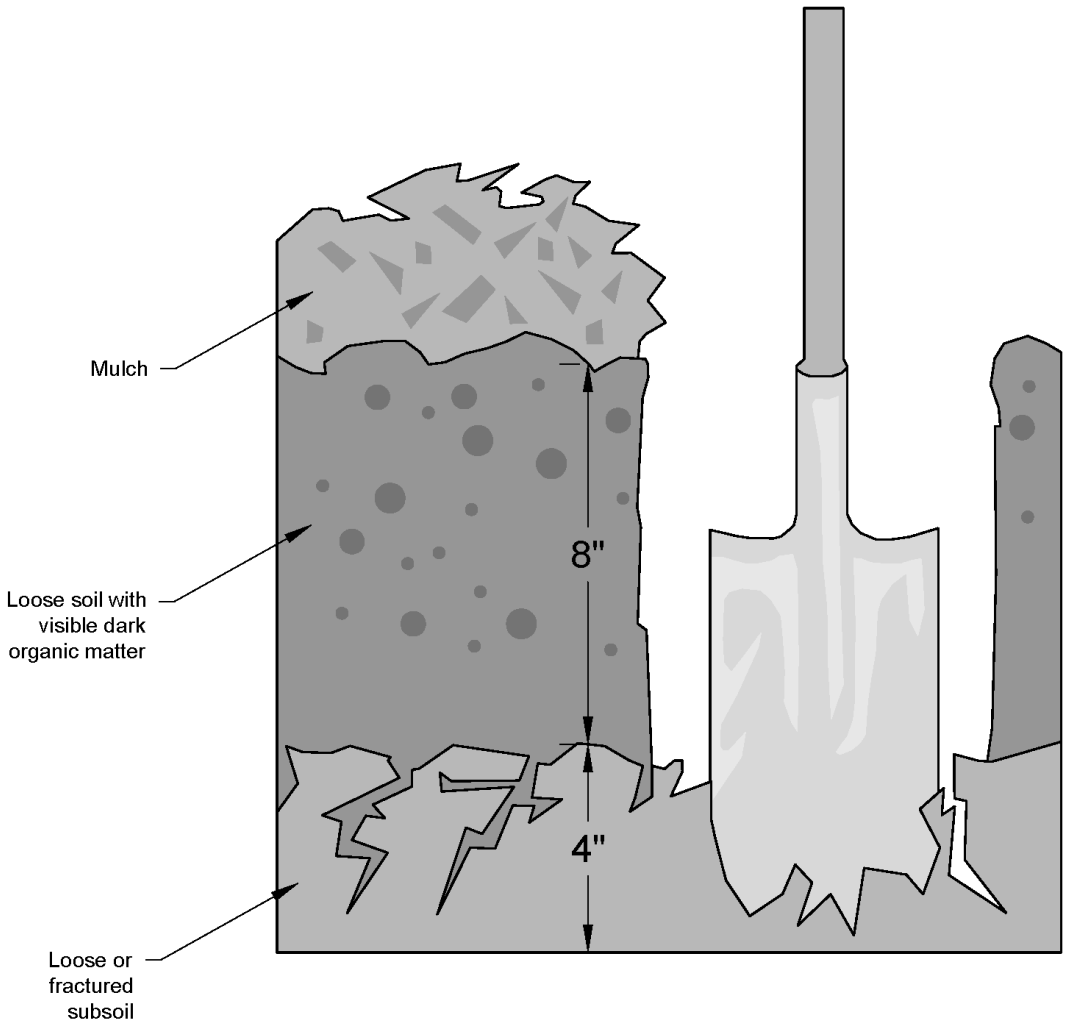
Maintenance

- Establish soil quality and depth toward the end of construction and once established, protect from compaction, such as from large machinery use, and from erosion.
- Plant vegetation and mulch the amended soil area after installation.
- Leave plant debris or its equivalent on the soil surface to replenish organic matter.
- Reduce and adjust, where possible, the use of irrigation, fertilizers, herbicides and pesticides, rather than continuing to implement formerly established practices.

Runoff Model Representation

All areas meeting the soil quality and depth design criteria may be entered into approved runoff models as "Pasture" rather than "Lawn/Landscaping".

Figure V-11.1: Planting Bed Cross-Section



Reprinted from *Guidelines and Resources For Implementing Soil Quality and Depth BMP T5.13 in WDOE Stormwater Management Manual for Western Washington*, 2010, Washington Organic Recycling Council

NOT TO SCALE

DEPARTMENT OF ECOLOGY
State of Washington

Planting Bed Cross-Section

Revised June 2016