Stormwater MK#7

RECEIVED
APR 20 2018
CITY OF MUKILTEO

CITY OF MUKILTEO

11930 Cyrus Way, Mukilteo, WA 98275
Phone: (425) 263-8000
http://mukilteowa.gov/

Application For Alternate Material, Design, or Method of Construction

Deviation Request Per Development Standards Section 1.5

Project Name: Zhang Short Plat

Project Address: 7903 53rd Ave W

	Owner	Petitioner/Applicant
Name	Zhang Family, LLC	
Address	9800 Harbour Pl, Ste 100	
City, State Zip	Mukilteo, WA 98275	
Daytime Phone		
E-Mail Address		

Any deviation request concerning a provision of the International Fire Code requires concurrence by the City of Mukilteo Fire Marshal. Documentation of concurrence by the Fire Marshal must be submitted with the request.

It is recognized that the need for and timing of a deviation request may not be predictable. Requests should be submitted as soon as the need becomes known. No deviation request will be considered until a permit application has been submitted. This is important for public notice and participation in the decision process.

The Public Works Director or designee reserves the right to direct or deny a deviation from the Mukilteo Development Standards at any time in the interest of public health, safety, and welfare.

Written Request (Submit plans, if necessary, to illustrate the request. Additional sheets or data may be attached.)

☑ Attachments

Justification/Findings of Equivalency/Code Sections (Must demonstrate/show how request meets each criteria listed below. Attach additional sheets if necessary.)

In accordance with Section 1.5 of the City of Mukilteo Development Standards, the following information is being presented in support of a request for deviation. The information submitted includes supporting information demonstrating compliance with the following criteria:

1. The deviation will not adversely affect safety or operations:

Because complete compliance with the Minimum Requirements (MRs) still requires systems that discharge down the hillsides, this deviation will not increase any safety hazards.

2. The deviation will not adversely affect the implementation of the Comprehensive Plan adopted in accordance with State Law:

Management of the storm water runoff as proposed allows the full development of the site and, hence, compliance with zoning as projected in the Comprehensive Plan.

3. The deviation conforms to the intent and purpose of the Mukilteo Municipal Code:

The deviation will provide for the efficient, safe and prudent discharge or storm water runoff and will meet the purpose of the MMC in protecting the environment and the quality of life for City residents.

4. The deviation produces a compensating or comparable result which is in the public interest: _____

A thorough analysis of the stream conditions to the east showed that as little runoff as possible from the site should be directed to it in order to protect the channel and associated vegetation and habitat, which protects the public interest. The action to minimize the flow going to the stream addresses that need.

5. The deviation will not impact future expansion, development, or redevelopment:

The drainage report for the project shows that full development of the properties that drain to the westerly drainage system this site will discharge to can occur even with all of the undetained project site runoff going that way. The small amount of runoff draining to the east will also allow all legal future expansion that will drain to that system.

6. Deviations from road standards must meet the objectives for fire protection and requires concurrence by the Fire Marshal (attach documentation):

This deviation is unrelated to road standards and fire protection.

7. The deviation considers maintenance costs in the design, and costs are not excessive or are borne and reliably performed by the applicant or property owner:

All of the proposed improvements will result in the minimum maintenance costs possible. Not doing the work necessitating the deviation would result in increased maintenance costs, in that much more detention would be required.

In addition to the criteria listed above, deviations from the stormwater Standards (called "Adjustments" in the Ecology Manual) demonstrates through findings of fact, compliance with the following criteria:

8. The deviation provides equivalent environmental protection, is clearly in the public interest, and will fully meet the objectives of safety, function, environmental protection and facility maintenance based upon sound engineering practices and principles:

This is further detailed in the attachment, but after careful study, the design specifically addresses the environment and presents the least impactive solution that meets applicable codes. Safety and function were an integral part of the design.

9. There are special physical circumstances or conditions affecting the property such that the strict application of the provisions of this chapter would deprive the property owner of all reasonable economic use of the property, and every effort has been made to find alternative ways to meet the intent and requirements of the Ecology Manual and MMC 13.12.160:

Strict compliance with the Manual would likely prevent full use and reasonable use of the property due to the need for a large detention vault. The primary basis for this deviation is protection of the environment without impacting safety and function.

10. The granting of the deviation will not be detrimental to the public health and welfare, will not be injurious to other properties in the vicinity and/or downstream of the property, and will not be injurious to the quality of the waters of the state:

No other properties are affected by the deviation and the public health and welfare is not impacted. The quality of the waters of the state is addressed and the requirements of the Manual are met.

11. The deviation provides the least possible deviation from the requirements:

The deviation provides very equivalent function and thus presents the least possible deviation from the requirements.

12. The deviation must show how all Stormwater Minimum Requirements are being met:

This was addressed and shown to be met in the Drainage Report.

I certify that I am the owner or owner's agent and have the authority to request the above stated alternate materials, methods of construction, or modification in the Development Standards. I understand that this request is subject to review and may be approved or denied in part or in whole. The City of Mukilteo's decision will be in writing and will be specific to this request, unless otherwise noted, and is based solely on the facts included with this request.

Signature	Title	Date
	Project Engineer	4/17/18
Print Name David C. Dougherty		

FOR STAFF USE ONLY

- ☑ Proposed design complies with the intent of the provisions of the current Mukilteo Municipal Code
- ☐ The material or method proposed is equivalent to criteria listed in Development Standards Section 1.5

DETERMINATION

This request is: ☑ Granted ☐ Granted with Conditions of Approval ☐ Denied

CONDITIONS OF APPROVAL:

Public Works Director or Designee

5/6/2019
Date

CITY OF
MUKILTEO
Public Works Department

TO: File No. SP-2017-002
FROM: Mick Matheson, P.E., Public Works Director
DATE: May 6, 2019
SUBJECT: Request for Adjustment to Stormwater Minimum Requirement #7: Flow Control

FINDINGS OF FACT

1. The property is located at 7908 53rd Avenue West, Mukilteo, WA 98275

2. The Parcel is legally described as:

   Section 09 Township 28 Range 04 Quarter SW WEST & WHEELERS SEAVIEW FIVE AC TRS BLK 000 D-00 LOT 45 THAT PART TR 45 LY WLY OF E LN TR 52 EXTENDED ACROSS SD TR THAT PART OF TRT 45 LY ELY OF E LNOF TR 52 EXTENDED ACROSS SD TRT SUBJ TO ESE TO P U D 1

3. The applicant submitted a short plat permit application on December 4, 2017, City Permit No: SP-2017-002. The application was determined to be complete on January 8, 2018.

4. The applicant submitted a Drainage Report dated June 1, 2018 as part of the Short Plat application. This Drainage Report was reviewed by City staff as supporting evidence for the Adjustment request.

5. The applicant submitted a Stream Qualitative Assessment Report dated November 10, 2017 as part of the application. This Report was reviewed by City staff as supporting evidence for the Adjustment request.

6. The applicant will be required to provide evidence of a permit from BNSF to discharge to the ditch in the railroad's right-of-way.

7. The City's adopted standards that apply to this project are: 1) *2014 Stormwater Management Manual for Western Washington* (*SWMMWW)* and, 2) the City of Mukilteo *2017 Development Standards (Standards).*

8. *SWMMWW,* Volume I, Section 2.7, Adjustments allows adjustments to the Minimum Requirements, provided that a written finding of fact is prepared that addresses the following:

   - The adjustment provides substantially equivalent environmental protection.

   - Based on sound Engineering practices, the objectives of safety function, environmental protection and facility maintenance, are met.

9. The *Standards,* Section 1.5, Deviation and Exception Processes, allows for alternatives to the Standards that may better accommodate existing conditions, and requires a written deviation request to be made on the Alternate Materials, Methods, or Modifications Request form (AMMM).

Stormwater Minimum Requirement Adjustments are allowed provided that a written finding of fact is prepared. The findings of fact must address the criteria found in Section 1.5 of the *Standards*.

10. An Application for Alternate Material, Design, or Method of Construction (Application) was received by the City on April 20, 2018, with a support letter from SDS, Site Development Services, dated June 1, 2018.

    a. The City accepts the justifications given for Items 1 through 3 in the Application.

    b. The City accepts the justification given for Item 4 with this clarification: The intent of the minimum requirements is to protect downstream freshwater bodies. Specifically, the intent of Minimum Requirement #4 (maintaining flows in their natural flow path) is to maintain the health of freshwaters. However, the Stream Qualitative Assessment found evidence of erosion in Olympic View Creek due to high flows. This proposal removes erosive high flows from the stream, while maintaining beneficial base flows.

    c. The City accepts the justifications given for Items 5 through 7.

    d. Based on the Drainage Report, the Qualitative Stream Assessment, and the permit from BNSF to discharge undetained flows to its Right-of-Way, the City accepts the justifications given for Item 8.

    e. The applicant states:

       "Strict compliance with the Manual would likely prevent full use and reasonable use of the property due to the need for a large detention vault. The primary basis for this deviation is protection of the environment without impacting safety and function."
       The property is, to some extent, unique regarding its physical conditions in that it lies within two basins – one goes to a flow control exempt water body and the other (which goes to a Type IV stream) does not. If the applicant built in accordance with standards, the applicant would need to meet the flow control requirements for the basin that discharges to the Type IV stream via construction of a deep detention vault that, according to the applicant engineer, would result in the storage of a large quantity of water that could leak and jeopardize surrounding slopes. Further, due to the unique physical conditions of this lot, this detention vault would require extensive, expensive grading and construction.
       The adjustment request offers a unique opportunity to provide the intended stream protection found in the Ecology manual via another reasonable alternative. Granting of the adjustment would still meet the intent of the Ecology manual by ensuring the pre-existing flow volumes to the stream and providing protection from scouring.

    f. The City accepts the justification given for Items 10 and 11, with the applicant's supporting documents.

    g. The City accepts the justification given for Item 12, with the applicant's supporting documents. The following is meant as a synthesis of those documents and the design:

CITY OF
MUKILTEO
Public Works Department

i. The property has two threshold discharge areas (TDAs), as defined by a north-south ridge on the property. These TDAs are referred to as the "east basin" and the "west basin" in the applicant's supporting documents.

ii. The west basin flows to the west, over a steep bluff, to a ditch on BNSF right-of-way, through an 18" culvert which discharges to Possession Sound (also referred to as Puget Sound in the applicant's drainage report dated June 1, 2018).

iii. The west basin is exempt from *SWMMWW* Minimum Requirement #7: Flow Control, with some restrictions, including that "Discharge to the exempt receiving water does not result in the diversion of drainage of any perennial stream classified as Types 1, 2, 3, or 4…"

iv. The east basin flows to the east, over a bluff, to Olympic View Creek. Olympic View Creek is a Type 4 Stream.

v. The east basin is not exempt from *SWMMWW* Minimum Requirement #7: Flow Control.

vi. The Stream Qualitative Assessment found evidence of erosion in Olympic View Creek due to high flows.

vii. The applicant proposes moving the erosive high flows from the east basin (Olympic View Creek) and moves them, undetained through a piped conveyance system, to the west basin (Possession Sound).

viii. The east basin retains drainage from approximately 0.09 acre to provide a base flow equivalent to the east basin (Olympic View Creek).

ix. The "base flow" to Olympic View Creek is shown to be the equivalent of ½ of the 2 year flow to the full five (5) year flow as compared to the predeveloped condition.

x. Additional height was added to the riser to reduce the frequency of overflow events.

Mick Matheson, P.E.
Public Works Director

SITE DEVELOPMENT SERVICES

RECEIVED
JUN 05 2018
CITY OF MUKILTEO

June 1, 2018

City of Mukilteo
Planning and Development Department (PDD)
11930 Cyrus Way
Mukilteo, WA 98275

Re: Zhang Short Plat, Application of MR#4, Preservation of Natural Drainage Systems and Outfalls, and MR#7, Flow Control

Dear PDD Staff:

This letter is prepared in support of the "Application for Alternate Material, Design, or Method of Construction" form, which is being submitted due to the manner in which we are proposing to apply the criteria that permits a direct discharge exemption. Runoff is partially directed to the east and will be shown to provide substantially equivalent environmental protection to the stream located there, while meeting the other requirements defined in the City's application form.

With regard to MR#7, flow control is not required for runoff directed to the west, as it drains directly to receiving water in manmade channels and pipes that are shown to have adequate capacity under full build out conditions. The one condition for doing this that necessitated directing some runoff to the east is that the diversion cannot remove runoff going to a Type 4 stream, which is in the easterly downstream path. To satisfy this requirement we are directing a base flow to the east that is equivalent to the flow going that way in the current conditions.

The following presentation is made based on the unique characteristics of the subject site and downstream conditions that not only qualify for special consideration, but require it in order to provide the maximum degree of slope, stream and overall environmental protection associated with the discharge of runoff from the site. Doing so will better comply with the intent of the regulations than would result by fully complying with them.

MR#4, Preservation of Natural Drainage Systems and Outfalls:

Requirement: To maintain natural drainage patterns to the maximum extent practicable.

Nature of Deviation (called "Adjustment in the Manual): Currently site runoff naturally sheet flows down to the east and west, as the site occupies a narrow north-south oriented ridge. The result of the deviation is to direct all site runoff to the west, with the exception that a base flow is maintained to the east in order to meet the DOE requirements for stream protection.

3011 Raven Crest, Bellingham, WA 98226 425-481-9687

Basis for Deviation: Vol I, Section 2.7 of the DOE Manual states that redirection of runoff must address the following:

- The deviation provides substantially equivalent environmental protection.
- The objectives of safety, function, environmental protection and facility maintenance, based upon sound engineering, are met.

The Technical Information Report provides the following basis for this diversion:

1. The construction of only one drainage system down a steep hill is preferable to constructing two systems. The existing storm drain conveying the runoff from Eagle Lane to the south of this project does not extend to the bottom of the ravine to the east. Thus it would likely have to be modified or upgraded if used as a discharge point for significant runoff from this project. The proposed solution does direct a small flow to the east as described below. However, that flow is piped to the Eagle Lane storm drain and connected to it with a new catch basin, so no work is required in the hillside.

2. No flow control exemptions are possible for runoff directed to the east. Thus detention would be required. Preliminary design of such systems revealed that due to existing site grades, either two detention systems are required or one very deep vault. A deep vault is very costly and impactive, and results in the storage of a large quantity of water. If the water were to leak out it could seriously jeopardize both the east and west steep slopes. Providing two detention systems is not possible if we must meet the required release rate for the lower storm events using a standard orifice riser. Doing this with a pump is not a desirable solution if there are alternatives, which there are in this case. Finally, doing this using the DOE paper on "Detention with a ½ inch orifice" results in vault with an extremely large plan area that would preclude at least one lot, while having significant safety impacts as mentioned above and in terms of the work associated with such deep excavations and large quantities of earth movement. In addition, this solution still does not meet the detention requirements for low flows. Thus, providing detention is an imperfect solution and could deny the property owner full and reasonable use of his property.

3. BNSF has approved draining the site to their ROW without detention. The size of the drainage basin this site presents is very small and will not result in any capacity or erosion issues on the downstream system. See the detention exemption discussion below.

4. The application of this MR in the DOE Manual states that runoff will be directed to the natural drainage patterns "to the maximum extent possible", and then sites reasons for this being preservation of drainage systems and to prevent erosion. Thus the Manual writers recognize that this is a case by case requirement subject to site evaluation to determine that these goals are met. The reasons for this requirement as specified in the Manual are the exact reasons that the flow should be directed as proposed. That is, the stream and ravine to the east are better protected by not draining the subject site in that direction. This case, made by

Wetlands and Wildlife in a report dated November 10, 2017, is attached to this letter. However, since compliance with MR#7, Flow Control, requires that any direct discharge does not result in the diversion of runoff from a Type 4 stream, a base flow based on the existing runoff flowing to the stream will be maintained.

5. The area that will be diverted from the east to the west is less than 0.83 acres. The ravine to which the east side drains has a basin size of more than 100 acres, so the diverted area is less than 0.8% of the basin area. This simply demonstrates that taking runoff from this site away from the stream will not have a significant effect on the flows it is carrying.

Environmental protection is enhanced by taking the runoff only down the west slope, as then only one slope is impacted with construction activity, as the proposed solution requires no work on the easterly steep slope. The overall impacts to the stream and ravine environment were examined in the above reference report with the following conclusion (among others) that support not directing runoff to the stream: "…..the proposed project's (Zhang project) stormwater design is the most ecologically appropriate stormwater drainage option for the subject property". It further states that it is the opinion of Wetlands and Wildlife, Inc. that the proposal to route all project-related stormwater to the west of the subject property will not cause any adverse impacts to the regulated stream located east of the property. This said, a base flow was directed to the east as stated above. This runoff is piped to the existing storm drain running along the south side of the site, and is the reason that no work is required on the easterly slope.

Safety and function are maximized by providing one hillside pipe rather than two. This also minimizes maintenance and the potential for ongoing issues. If the adjustment were not requested it would still require a pipe down the west slope. The added runoff from the east side of the site does not require a larger pipe and does not increase the forces involved with energy dispersal, as the design assumes the pipe plugs up and its full weight must be supported. This event is not exacerbated by the added runoff from the east portion of the site.

MR#7, Flow Control:

Requirement: To provide flow control due to the amount of new and impervious area and the increase in runoff. Flow control is not required if the runoff is directly discharged to a receiving water. Per Section 2.5.7 in Volume I of the DOE Manual, the direct discharge cannot divert runoff from a Type 1, 2, 3, or 4 stream.

Deviation Being Requested: To move high flows from a Type 4 stream.

Explanation of How the Deviation is Satisfied: The first requirement listed in Section 2.5.7 relates to diversion of runoff. This requirement is address in the MR#4 discussion, above. The conclusion is that due to development in the drainage basin to the east, the stream that serves that basin (and the subject site) is being stressed with high flows. To divert the runoff from this site that currently drains to this stream will help to reduce that problem. However, since compliance with this MR requires that any direct discharge does not result in the diversion of runoff from a Type 4 stream, a base flow based on the existing runoff flowing to the stream will be maintained.

The remaining requirements deal with the conveyance system to the point of discharge to the receiving water. This system is or will be fully man made. The runoff will be piped downstream to the railroad ditch, at which point a dispersal system is proposed that has been approved by the BNSF Railway. All of the installation will be designed to properly manage "erodible elements". The ditch conveys the runoff parallel to the tracks and to an 18 inch culvert that goes under the tracks and outfalls to Puget Sound. As shown in the attached basin map, there are many such culverts, so adjacent basins drain to those. This limits the basin that must be evaluated to the area as shown in the attached basin map, which is also included in the Technical Information Report for the project. Due to the limited size of the basin, there will be no new development beyond the construction for the subject short plat. The report shows that the runoff volume for the basin is well within the capacity of the railroad ditch and the 18 inch culvert.

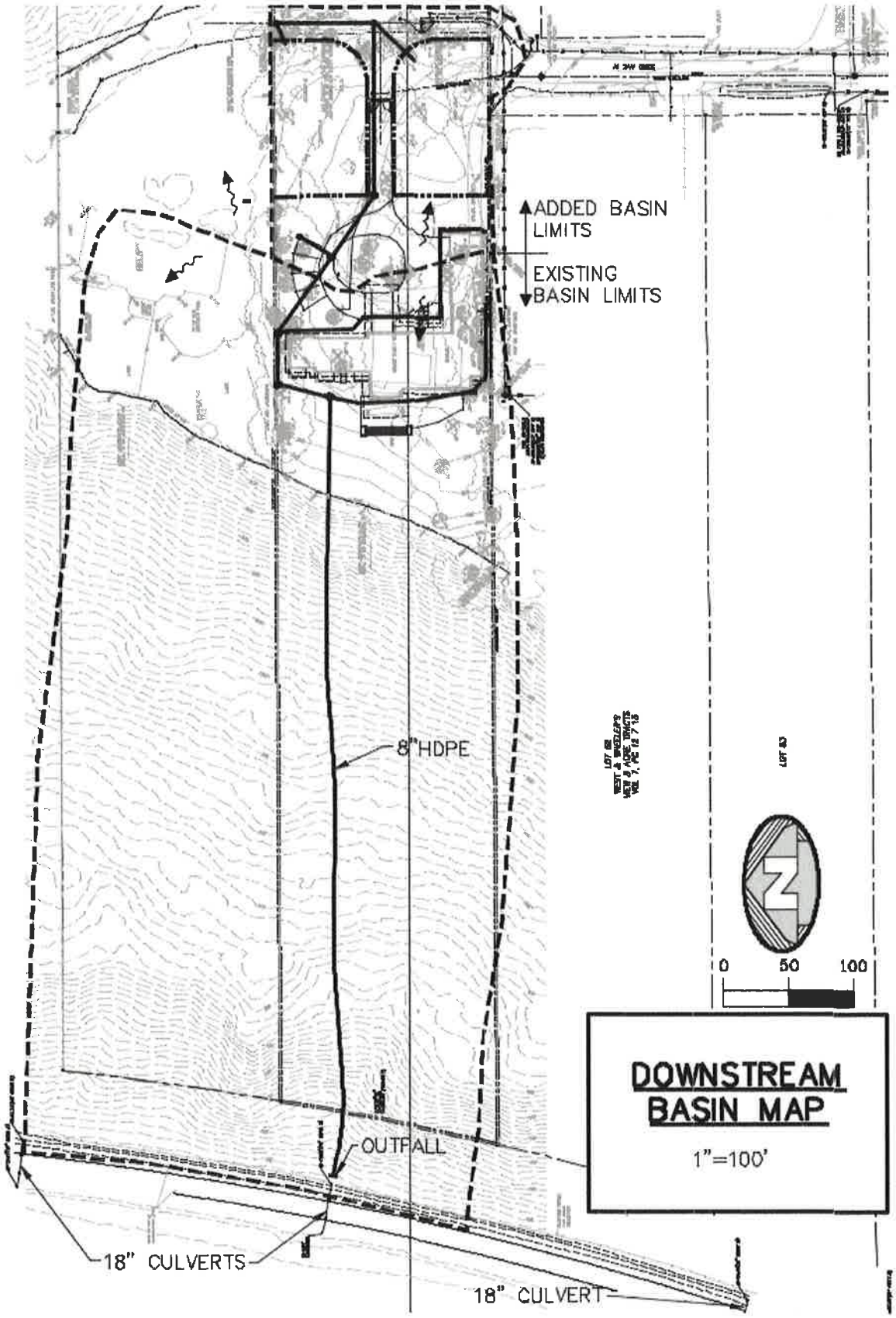
Therefor the requirements for the Deviation are met and a direct discharge complies with the conditions under which a direct discharge can be approved.

Sincerely Yours,

David C. Dougherty, P.E.

Encl: Stream Qualitative Assessment Report by Wetlands & Wildlife

3011 Raven Crest, Bellingham, WA 98226 425-481-9687


ADDED BASIN LIMITS
EXISTING BASIN LIMITS
8"HDPE
OUTFALL
18" CULVERTS
18" CULVERT
0
50
100
DOWNSTREAM BASIN MAP
1"=100'

SITE DEVELOPMENT SERVICES

November 17, 2017

City of Mukilteo
Planning and Development Department (PDD)
11930 Cyrus Way
Mukilteo, WA 98275

Re: Zhang Short Plat, Application of MR#4, Preservation of Natural Drainage Systems and Outfalls, and MR#7, Flow Control

Dear PDD Staff:

This letter is prepared as a formal request to apply provisions for varying from full application of each of the above reverenced MRs. With regard to MR#4, the request is for an "Adjustment" as provided for in Vol I, Section 2.5.3 and defined in the glossary in Vol I. Runoff is partially directed to a natural location and provides substantially equivalent environmental protection, while meeting the other requirements defined in Section 2.7 for Adjustments. Therefore, it is not an Exception; however, the criteria for granting both are similar.

With regard to MR#7, neither an Adjustment nor Exception is required. Rather, it must be shown that the project complies with the provisions for a direct discharge to a "Flow Control-Exempt Surface Water". The restrictions that must be met are defined in Vol I, Section 2.5.7.

The following presentation is made based on the unique characteristics of the subject site and downstream conditions that not only qualify for special consideration, but require it in order to provide the maximum degree of slope, stream and overall environmental protection associated with the discharge of runoff from the site. Doing so will better comply with the intent of the regulations than would result by complying with them.

MR#4, Preservation of Natural Drainage Systems and Outfalls:

Requirement: To maintain natural drainage patterns to the maximum extent practicable.

Nature of Adjustment: Currently site runoff naturally sheet flows down to the east and west, as the site occupies a narrow north-south oriented ridge. The adjustment is to direct all site runoff to the west.

3011 Raven Crest, Bellingham, WA 98226 425-481-9687

Basis for Adjustment: Vol I, Section 2.7 of the DOE Manual states that this request must address the following:

- The adjustment provides substantially equivalent environmental protection.
- The objectives of safety, function, environmental protection and facility maintenance, based upon sound engineering, are met.

The Technical Information Report provides the following basis for this diversion:

1. The construction of only one drainage system down a steep hill is preferable to constructing two systems. The existing storm drain conveying the runoff from Eagle Lane to the south of this project does not extend to the bottom of the ravine to the east. Thus it would likely have to be modified or upgraded if used as a discharge point for runoff from this project.

2. No flow control exemptions are possible for runoff directed to the east. Thus detention would be required. Preliminary design of such systems revealed that due to existing site grades, either two detention systems are required or one very deep vault. A deep vault is this very costly and impactive, and providing two detention systems is not possible if we must meet the required release rate for the lower storm events using a standard orifice riser. Doing this with a pump is not a desirable solution if there are alternatives, which there are in this case. Finally, doing this using the DOE paper on "Detention with a ½ inch orifice" results in even bigger vaults that would preclude at least one lot, while having significant impacts in terms of the impacts associated with such deep excavations and large quantities of earth movement. In addition, this solution still does not meet the detention requirements for low flows. Thus, providing detention is an imperfect solution.

3. Discussions with the BNRR have revealed a general agreement with the concept of draining the site to their ROW without detention. The size of the drainage basin this site presents is very small and will not result in any capacity or erosion issues on the downstream condition. See the detention exemption discussion below.

4. The application of this MR in the DOE Manual states that runoff will be directed to the natural drainage patterns "to the maximum extent possible", and then sites reasons for this being preservation of drainage systems and to prevent erosion. Thus the Manual writers recognize that this is a case by case requirement subject to site evaluation to determine that these goals are met. The reasons for this requirement as specified in the Manual are the exact reasons that the flow should be directed as proposed. That is, the stream and ravine to the east are better protected by not draining the subject site in that direction. This case, made by Wetlands and Wildlife in a report dated November 9, 2017, is attached to this letter.

5. The area that will be diverted from the east to the west is 0.83 acres. The ravine to which the east side drains has a basin size of more than 100 acres, so the

diverted area is less than 0.8% of the basin area. This simply provides an idea of the fact that taking runoff from this site away from the stream will not have a large effect on the flows it is carrying.

Environmental protection is enhanced by taking the runoff only down the west slope, as then only one slope is impacted. The overall impacts to the stream and ravine environment were examined in the above reference report with the following conclusion (among others) that support not directing runoff to the stream: "…..the proposed project's (Zhang project) stormwater design is the most ecologically appropriate stormwater drainage option for the subject property". It further states that it is the opinion of Wetlands and Wildlife, Inc. that the proposal to route all project-related stormwater to the west of the subject property will not cause any adverse impacts to the regulated stream located east of the property.

Safety and function are maximized by providing one hillside pipe rather than two. This also minimizes maintenance and the potential for ongoing issues. If the adjustment were not requested it would still require a pipe down the west slope. The added runoff from the east side of the site does not require a larger pipe and does not increase the forces involved with energy dispersal, as the design assumes the pipe plugs up and its full weight must be supported. This event is not exacerbated by the added runoff from the east portion of the site.

MR#7, Flow Control:

Requirement: To provide flow control due to the amount of new and impervious area and the increase in runoff.

Exemption Being Requested: Direct Discharge via a man-made drainage system to a "Flow Control-Exempt Surface Water". In this case, Puget Sound.

Explanation of How the Exemption is Satisfied: The first requirement listed in Section 2.5.7 relates to diversion of runoff. This requirement is address in the MR#4 discussion, above. The conclusion is that due to development in the stream drainage basin to the east, that the stream is being stressed with high flows. To divert the runoff from this site will help to reduce that problem.

The remaining requirements deal with the conveyance system to the point of discharge to the receiving water. This system is or will be fully man made. The runoff will be piped downstream to the railroad ditch, at which point a dispersal system is proposed that will be approved by the BNRR. All of the installation will be designed to properly manage "erodible elements". The ditch conveys the runoff parallel to the tracks and to an 18 inch culvert that goes under the tracks and outfalls to Puget Sound. As shown in the attached basin map, there are many such culverts, so adjacent basins drain to those. This limits the basin that must be evaluated to the area as shown in the attached basin map, which is also included in the Technical Information Report for the project. Due to the limited size of the basin, there will be no new development beyond the construction for the subject short plat. The report shows that the runoff volume for the basin is well within the capacity of the railroad ditch and the 18 inch culvert.

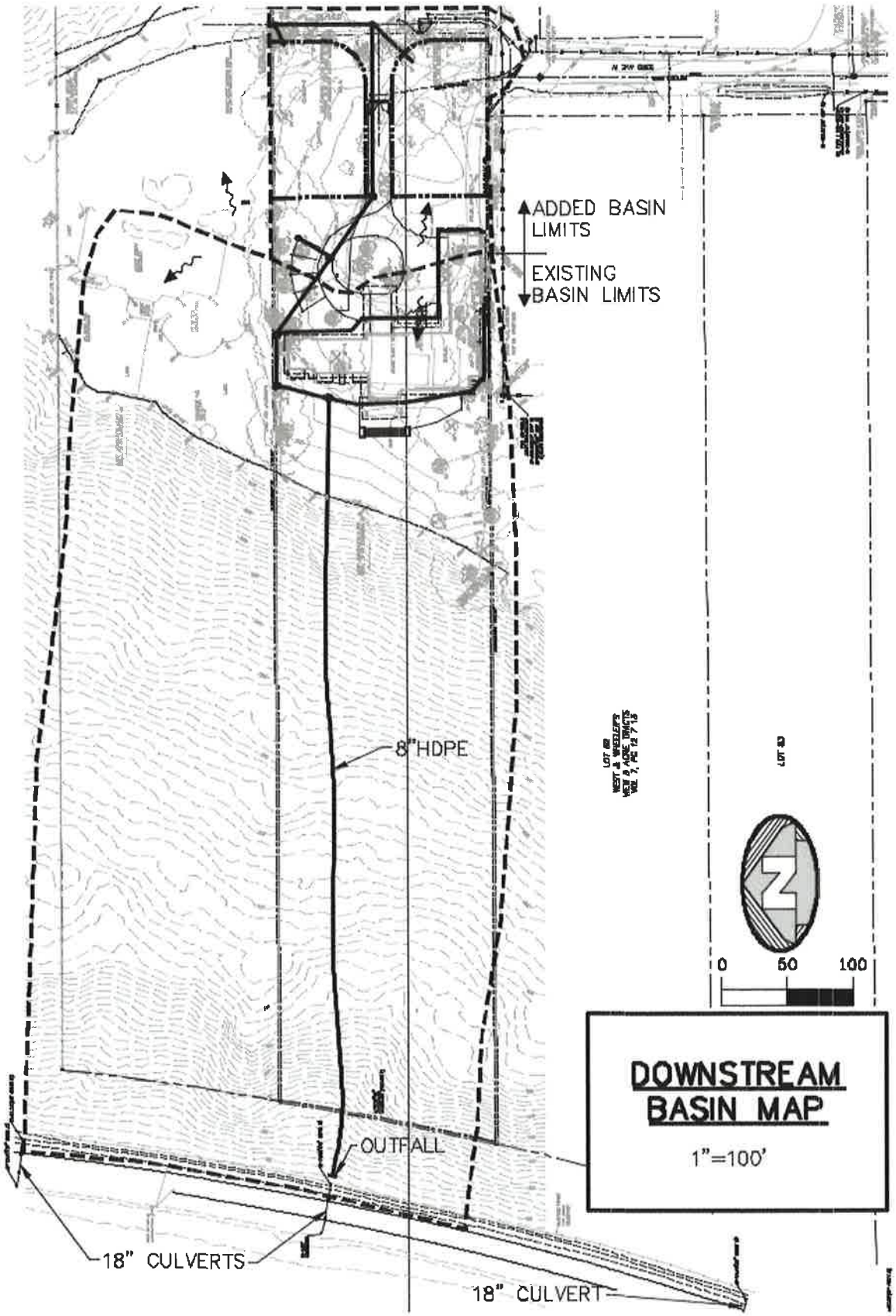
Therefor the requirements for the Exemption are met and a direct discharge complies with the conditions under which a direct discharge can be approved.

Sincerely Yours,

David C. Dougherty, P.E.

Encl: Stream Qualitative Assessment Report by Wetlands & Wildlife

3011 Raven Crest, Bellingham, WA 98226 425-481-9687


ADDED BASIN LIMITS
EXISTING BASIN LIMITS
8"HDPE
OUTFALL
18" CULVERTS
18" CULVERT
0
50
100
DOWNSTREAM BASIN MAP
1"=100'