



CITY OF MUKILTEO, WASHINGTON

# 2017 Development Standards

2019 Amendment



City of Mukilteo  
11930 Cyrus Way  
Mukilteo, WA 98275  
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# 2017 Development Standards

## City of Mukilteo

Adopted by Resolution #2016-19

Amending Resolution #2019-014, effective August 19, 2019

Public Works Department

11930 Cyrus Way  
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# Chapter 1 - General Considerations

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## 1.1 Purpose

These Development Standards (the Standards) will govern all new construction and upgrading of facilities, both in the right-of-way and on-site, for transportation-related facilities; storm drainage facilities; private facilities; and park, recreation, and open space facilities within the City of Mukilteo. The intent of the Standards is to provide guidance to project applicants on how to best meet standards for safety, constructability, durability, and maintainability. These are minimum standards, intended to assist in project design; they do not substitute for sound engineering, nor will they apply in every situation. The Public Works Director may determine that some conditions or other codes, rules, and regulations require more stringent design than normally required under these Standards.

These [Development Standards](#) and the [Mukilteo Municipal Code](#) are available at [www.mukilteowa.gov](http://www.mukilteowa.gov).

## 1.2 Code Authority

The Standards set forth minimum engineering criteria and specifications, and supplement the [Mukilteo Municipal Code](#) (MMC). The Standards do not replace the MMC. The Development Standards are defined in MMC 17.08.

These Standards have been prepared under the authority given to the Public Works Director in [MMC](#) 12.04.050 and 13.12.020, and were adopted by City Council via Resolution Number 2016-019, and Amending Resolution 2019-014.

## 1.3 Responsibility

Plan approval does not relieve the Applicant, the Applicant's engineer, or the contractor from the responsibility for ensuring that all facilities are safe and that calculations, plans, specifications, construction drawings and record drawings with as-constructed information are in compliance with accepted engineering practices, this manual, and applicable federal, state, and local laws and codes.

## 1.4 Standards, Companion Documents, and Definitions

Design detail, construction workmanship, and materials shall be in accordance with these Standards and the latest edition of the following companion documents, with the exception of the Ecology Manual, which shall be the version as defined in MMC 17.08. Design and construction shall meet the applicable standards and codes, and the recommendations in specific reports, such as, but not limited to, the geotechnical report, the transportation impact study, and the drainage report.

Development of public or private projects shall be consistent with all City codes, master planning documents, including but not limited to the following:

1. [City of Mukilteo Comprehensive Plan](#)
2. [City of Mukilteo Municipal Code](#)
3. [Comprehensive Surface Water Management Plan Update](#)
4. Other City Approved Plans, check with the City to see which ones may apply to your project.

#### **1.4.1 Companion Documents**

When standards or other design criteria are not specifically addressed in the Mukilteo Development Standards and the Mukilteo Municipal Code, then the following shall govern the design detail, construction workmanship, and materials. (The latest editions are to be used, unless otherwise noted.)

1. [WSDOT Standard Specifications for Road, Bridge, and Municipal Construction](#)
2. [WSDOT Design Manual](#)
3. [Manual on Uniform Traffic Control Devices, Federal Highway Administration](#)
4. [A Policy on Geometric Design of Highways and Streets, AASHTO](#)
5. [Guide for the Development Bicycle Facilities, AASHTO](#)
6. [ADA Standards for Accessible Design](#)
7. [2011 Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way \(2011 PROWAG\)](#)
8. [WSDOT Standard Plans](#)
9. [WSDOT Local Agency Guidelines](#)
10. [Stormwater Management Manual for Western Washington \(Ecology Manual\)](#). See MMC 13.12.160 for which Edition to use.
11. [Low Impact Development Technical Guidance Manual for Puget Sound, WSU Extension](#)
12. [Rain Garden Handbook for Western Washington: A Guide for Design, Installation, and Maintenance](#)
13. [American Society for Testing and Materials \(ASTM\)](#)
14. [Standard Rock Wall Construction Guidelines, Associated Rockery Contractors](#)

### **1.4.2 Definitions**

Definitions found in MMC 17.08, or the Ecology Manual shall be applied to the Development Standards. Words not defined shall have their usual meaning. Unless otherwise specified, “Director” shall mean the Public Works Director in the Standards.

## **1.5 Deviations, Stormwater Adjustments, and Stormwater Exceptions Processes**

These Standards represent appropriate practices under most conditions, based on past experience in the City of Mukilteo. They are intended to provide facilities that are safe and appropriate for use in the City of Mukilteo.

Situations will arise where alternatives to these Standards may better accommodate existing conditions without adversely affecting safety, human and environmental health, operations, maintenance, or aesthetics.

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

### **1.5.1 Deviations**

A written deviation request must be made on the Alternate Materials, Methods, or Modifications Request Form, and must include plans that are completed by the project design engineer. The applicant must supply adequate information through narrative, project design and/or supporting reports to show how the Adjustment meets all of the following criteria:

1. The deviation conforms to the intent and purpose of the Mukilteo Municipal Code; and
2. The deviation will not adversely affect the implementation of the Comprehensive Plan adopted in accordance with State Law; and
3. The deviation produces a compensating or comparable result which is in the public interest; and
4. The deviation will not impact future expansion, development, or redevelopment; and
5. 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; and
6. The deviation provides the least possible deviation from the requirements; and
7. Deviations from road standards must meet the objectives for fire protection and requires concurrence by the Fire Marshal; and
8. Deviations from stormwater standards must show they are not detrimental to the public health and welfare, are not injurious to other properties in the vicinity and/or



downstream of the property, and are not injurious to the quality of the waters of the state; and

9. The deviation provides substantially equivalent environmental protection; and.
10. Based on sound Engineering practices, the objectives of safety, function, environmental protection and facility maintenance, are met; and
11. The deviation meets all Stormwater Minimum Requirements.

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.

The Public Works Director or designee reviews the request and makes a determination, which may include conditions appropriate to the request. The Public Works Director reserves the right to direct or deny a deviation from these Standards at any time in the interest of public health, safety, and welfare.

### **1.5.2 Adjustments to Stormwater Minimum Requirements**

A written Adjustment request must be made on the Alternate Materials, Methods, or Modifications Request Form, and must include plans that are completed by the project design engineer. The applicant must supply adequate information through narrative, project design and/or supporting reports to show how the Adjustment meets the criteria for items #1-10 in Section 1.5.1 of the Standards.

The request for an Adjustment to a Stormwater Minimum Requirement must be submitted to the Director for review. A written findings of fact that addresses #9 and #10 in Section 1.5.1 of the Standards is prepared by the Director and a determination on whether to allow the Adjustment request is made.

The City follows the process outlined in the NPDES Phase II Permit, Appendix 1, Sections 5, Adjustments, to Stormwater Minimum Requirements. If discrepancies are found, the NPDES Phase II Permit requirements shall prevail.

### **1.5.3 Exceptions to Stormwater Minimum Requirements**

A property owner seeking an exception from the Stormwater Minimum Requirements (also called Exceptions/Variations in the Ecology Manual) shall file an exception application with the required application fee. The Exception process is outlined in MMC 13.12.160.

The property owner shall bear the burden of proof for any requested exception. The applicant must show through narrative, project design and/or supporting reports how the Exception to the Stormwater Minimum Requirement imposes a severe and unexpected economic hardship on the project applicant. To determine whether the application of the Stormwater Minimum

Requirements imposes a severe and unexpected economic hardship, the written request shall address the following:

1. The current (pre-project) use of the site; and
2. How the application of the minimum requirement(s) restricts the proposed use of the site compared to the restrictions that existed prior to the adoption of the minimum requirements; and
3. The possible remaining uses of the site if the exception were not granted and the uses of the site that would have been allowed prior to the adoption of the minimum requirements; and
4. The uses of the site that would have been allowed prior to the adoption of the minimum requirements; and
5. A comparison of the estimated amount and percentage of value loss as a result of the minimum requirements versus the estimated amount and percentage of value loss as a result of requirements that existed prior to adoption of the minimum requirements; and
6. The feasibility for the owner to alter the project to apply the minimum requirements; and
7. The exception will not increase risk to the public health and welfare, nor be injurious to other properties in the vicinity and/or downstream, and to the quality of the waters of the state; and
8. The exception is the least possible exception that could be granted to comply with the intent of the minimum requirements.

The director will make a written findings of fact which addresses the eight items list above, and will make a determination on whether to allow the Exception request.

An application fee established by the City Council shall accompany the application. The application fee shall be applied to all the costs and expenses incurred by the City in processing the application. In the event the filing fee is inadequate, the City shall bill any additional costs associated with the review to the applicant which shall be paid within 30 days; and prior to the granting or denial of any exception herein.

The City follows the NPDES Phase II Permit, Appendix 1, Sections 6, Exceptions, to Stormwater Minimum Requirements. If discrepancies are found, the NPDES Phase II Permit requirements shall prevail.

## **1.6 Financial Guarantee**

Security devices or other allowable securities shall be required by the City to guarantee the performance or maintenance of the required work. The City determines the performance and maintenance financial guarantee amounts based on estimates and true costs submitted by the

Applicant. The performance guarantee must be submitted before permit issuance. The maintenance guarantee must be provided before final approval.

#### **1.6.1 Performance**

1. 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.
2. A performance guarantee may be required for proposed private improvements such as, but not limited to, landscaping, tree replacement, critical area restoration, stormwater facilities installation, and for erosion and sediment control.
3. Performance financial guarantees remain in full force and effect until:
  - a. The obligations secured are fully performed as determined by the City's final inspection and approval process; and
  - b. A guarantee for maintenance and operation of all improvements for a guarantee period have been submitted to the City; and
  - c. The City has released the guarantee in writing.

#### **1.6.2 Maintenance**

1. The City requires a maintenance guarantee, at a rate of fifteen percent (15%) of the construction costs for public improvements, landscaping, stormwater facilities, and critical areas.
2. The maintenance guarantee is required for a period of two (2) years, and is for the guarantee of maintenance and operation of public improvements.
3. A maintenance guarantee may be required to guarantee maintenance and operation of on-site improvements for a period of at least two (2) years.
4. For critical area restoration, the maintenance guarantee is required for a period of five (5) years.
5. The maintenance guarantee period begins the date of final inspection date.
6. Maintenance financial guarantees remain in full force and effect until:
  - a. The determined time period has passed since the project has been inspected, approved, and accepted by the City; and
  - b. The City has performed an inspection and found no defects in labor and materials, if defects in labor or materials is found, the contractor has corrected these and the City has re-inspected; and
  - c. The City has released the guarantee in writing.



# Chapter 2 - Administration

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## **2.1 Engineering Permits**

The information contained in this chapter summarizes the requirements in the [City of Mukilteo Municipal Code](#). If there are any conflicts, the Municipal Code shall prevail. Prior to beginning a residential, commercial, or industrial development, or a project requiring construction of public infrastructure within the City, the applicant must prepare and submit a complete application, including permit application, plans, and specifications to the City of Mukilteo for review and approval. Other permits may be required through the City's Community Development Department, and/or other outside agencies.

The engineering permit application contains the Right-of-Way Permit, the Clearing and Grading Permit, and the Stormwater Permit. Complete the portion(s) that apply to your project.

### **2.1.1 Right-of-Way Permits**

City rights-of-way shall not be privately improved or used for access or other purposes unless a permit has been issued for such use. Issued permits do not convey any vested right or ownership interest in any City right-of-way.

Right-of-Way Permits are issued for short-term activities in the right-of-way and temporary or permanent alteration of the right-of-way. The types of Right-of-Way Permits may be found in [MMC 12.04.040](#).

A right-of-way use permit shall not be required of franchised utilities or City contractors when responding to emergencies that require work within the right-of-way, such as water or sewer main breaks, gas leaks, downed power lines, or similar emergencies; provided that the Public Works Department shall be notified by the responding utility or City contractor verbally or in writing as soon as practicable following onset of an emergency. The responding utility or City contractor shall obtain a Right-of-Way Permit after beginning emergency work in the right-of-way.

#### **2.1.1.1 Right-of-Way Permit Exemptions**

The following activities are exempt from a Right-of-Way Permit:

1. Routine installation, maintenance, or construction work performed by City maintenance crews.
2. Minor utility maintenance that does not disturb right-of-way or disrupt traffic patterns. In addition, the work does not include any breaking of asphalt, curb, gutter, or sidewalk. Examples of minor utility work include, but are not limited to, the following:
  - a. Street lamp replacement;

- b. Accessing existing manholes and vaults;
- c. Raising valves;
- d. Replacing aboveground meters, transformers, closures, and pedestals.

Right-of-Way permits shall be valid for the duration specified in the permit. If continued use of the right-of-way is desired by the permittee after expiration of a permit, an extension of not greater than the duration of the original permit may be applied for, and granted, by the Public Works Director.

#### **2.1.1.2 *Blanket Right-of-Way Permits***

Utility companies and franchised utilities may apply for a blanket right-of-way permit (Type G) for the use of non-arterial public right-of-way within the City for blanket permit activities that has a moderate effect on non-arterial right-of-way or traffic patterns. Some examples of blanket activities include, but are not limited to:

- 1. Installing utility services while disturbing no pavement;
- 2. Installing short side services and hydrants;
- 3. Drilling or boring under a street;
- 4. Repairing service line connections within the graveled shoulder; and
- 5. Routine utility line maintenance.

Blanket right-of-way permits allow the utility to perform the above type activities without the necessity of an individual permit for each activity. Blanket permit activities not listed on the face of the permit shall require a separate right-of-way permit.

Blanket right-of-way permits may be approved for a period of up to one year from the date of issuance and are subject to the requirements found in [MMC 12.04](#).

All Blanket permit holders shall provide written notification to the City twenty-four (24) hours before starting any blanket activity work. As well as submit a quarterly report to the City which identifies all blanket activities performed within the City in the previous three-month period.

#### **2.1.2 *Clearing & Grading Permits***

Any person wishing to make changes or cause changes to be made in the surface of any land by grading, excavating, or removing/disturbing the natural topsoil, trees, or other vegetative covering shall obtain a Clearing & Grading Permit. A clearing and grading permit shall be issued in conjunction with the requirements found in [MMC Chapter 15](#).

The expiration of Clearing & Grading Applications and issued Permits shall be of the same duration as building applications and issued building permits, see MMC 17.13.030. However, the City may set specific limits to the permit for project initiation and/or completion for environmental reasons or for coordination with other permitted site work.

### **2.1.2.1 Retaining Walls**

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.

### **2.1.3 Stormwater Permits**

A stormwater permit as defined in MMC Chapter [17.08](#) shall be required to construct stormwater facilities and/or to make any additions, repairs or connections to an existing stormwater facility, including connecting to the City's stormwater infrastructure. Stormwater permit applications shall be made by the property owner on the Engineering Application and shall include all fees and information required by the City.

The property owner shall be responsible to identify and obtain all other permits and/or approvals required for any proposed work, including but not limited to approvals from the Washington State Department of Fish and Wildlife, the Washington State Department of Ecology, the Army Corps of Engineers, the U.S. Fish and Wildlife Service, Burlington Northern Santa Fe Railway Company, and the City.

Stormwater permits shall require the property owner to build all the stormwater facilities needed to serve the property, including but not limited to conveyance systems, detention/retention facilities, and other system components, and shall incorporate stormwater treatment BMPs, as defined by the Stormwater Minimum Requirements for the project.

A building permit shall not be issued until all required stormwater permits have been approved.

When a stormwater permit is required to relocate a stormwater facility from under a proposed building, the building permit shall not be approved until the work to relocate the stormwater facility has been completed and accepted by the City, unless the building permit is expressly conditioned by the director to require relocation and approval of the relocated stormwater facility prior to commencement of site construction.

The expiration of Stormwater Permit Applications and issued Permits shall be of the same duration as building applications and issued building permits, associated with the project and reviewed under MMC 17.13.030. However, the Public Works Director may set specific limits to the permit for project initiation and/or completion for environmental reasons or for coordination with other permitted site work. When a Stormwater Permit is not issued in conjunction with a building permit or project permit reviewed under MMC 17.13, the Stormwater Permit shall be valid for six months. If a continuation of the Stormwater Permit is desired by the permittee, one extension of not greater than the duration of the original permit may be applied for, and granted, by the Public Works Director, or their designee. One renewal of a stand alone Stormwater Permit is allowed.

In accordance with the City's NPDES Stormwater Permit for Western Washington, Stormwater Permits which were approved prior to January 1, 2017 and have not started construction prior to

January 1, 2022, must meet the requirements of the 2014 Ecology Manual. If the project was designed under any Manual prior to the 2014 Ecology Manual, the Stormwater Permit Expiration Date shall be December 30, 2021. The Permit Expiration Date of December 31, 2021 applies to all Stormwater Permits meeting the criteria of this paragraph, regardless of the expiration date of any associated building permit, project permit, or other permit.

## 2.2 Permitting Process

### 2.2.1 Permit Process

Table 1 - Permit Process Outline is a general outline of the application review process and may be adjusted to meet particular project circumstances. Not all of the steps listed below are required for all permits. Contact the Community Development Department for an explanation of the steps applicable to a certain permit application. Description of the various elements of the permit process follows the table.

**Table 1 – Permit Process Outline**

Activity		Responsible Party
I.	Schedule a pre-application meeting	Applicant
II.	Project Proposal <ul style="list-style-type: none"> <li>A. Prepare studies and reports</li> <li>B. Prepare Project Plans</li> </ul>	Applicant
III.	Application(s) Submittal Only applications meeting the procedural submittal requirements will be processed (Refer to the appropriate permit submittal checklist for required submittal information) <ul style="list-style-type: none"> <li>• Appropriate Application Form(s)</li> <li>• Project Plans</li> <li>• Reports or other submittal information</li> <li>• Application fee</li> </ul>	Applicant
IV.	Review <ul style="list-style-type: none"> <li>• Assign a project manager (PM)</li> <li>• Determine completeness</li> <li>• Coordinate reviews (for example: Community Development, Fire Department, Public Works, Engineering, and Building)</li> <li>• Approve permit or send a comment letter to designated contact.</li> </ul>	City
V.	Revision and Re-submittal <ul style="list-style-type: none"> <li>A. Revise plans per the City's comments</li> <li>B. Submit revised plans and provide revised supporting documents</li> </ul>	Applicant
VI.	Revision and Re-submittal Review <ul style="list-style-type: none"> <li>A. Coordinate plan review and verify that all comments have been satisfactorily addressed.</li> <li>B. Approve permit OR send a comment letter to designated contact.</li> </ul>	City
VII.	Notification Notify Applicant's designated contact regarding outstanding items needed for issuance. Before the permit is issued, all requirements for issuance must be met. These may include a business license, proof of insurance, financial guarantee, covenants, easements, payment of fees, and/or dedications. When	City

Activity	Responsible Party
all conditions for issuance are met, and the permit(s) is ready to issue, a representative from the Permit Center will notify the designated contact person that the permit is ready. At this time, the Permit Center will notify the Applicant of the fees that are owed.	
VIII. Pre-Construction Meetings The Permit Center will schedule a pre-construction meeting if required by the City for your project. An Applicant may also request a pre-construction meeting. No construction may start until a permit has been issued, even if a pre-construction meeting was held.	City
IX. Obtain Permit A. Provide outstanding items B. Pay any remaining fees and post required financial guarantees C. Receive the permit	Applicant
X. Construction A. Complete all activities identified in the approved plans to the City of Mukilteo's satisfaction. B. Notify the City Inspector(s) assigned to the project 72 hours in advance of when the elements will be ready for inspection	Permittee
XI. Perform all required inspections, including final inspection	City (Permittee must schedule)
XII. Release Performance Financial Guarantee after final (if there is one in place)	City
XIII. Close-out Provide maintenance/monitoring financial guarantee Provide as-builts/record drawings when required	Permittee
XIV. Cancel expired permit applications when applicable. See 2.2.9, Permit Timing & Expiration	City
XV. Permit Extension Request (If Applicable)	Permittee

### 2.2.2 Pre-application Meeting

Not all projects require a pre-application meeting, but many projects benefit from this service. A pre-application meeting allows the potential Applicant, City representative(s), and external agencies an opportunity to discuss a proposed project before a permit application is submitted. The pre-application meeting provides the project proponent information regarding permits, permit processes, codes, and standards that apply to the proposed project. To request a pre-application meeting please call the City at 425.263.8000.

### 2.2.3 Determination of Complete Application

All plans and reports are to be submitted to the Permit Center. Any necessary easements, dedications, contracts, agreements, bonds, deviation requests will be submitted for review along with the plans. A completeness check of the plans against the plan checklists for projects requiring prior discretionary land use permit or approval shall follow the checklist in the [MMC 17.13](#) or [17B.13](#). All other applications will be checked against the plan checklists by the Engineering/Public Works staff. If the plans meet the minimum checklist requirements as to context, it will be determined to be a complete application and the plan review process begins.

If the plans do not meet the minimum checklist requirements, the Applicant will be notified and review will not begin until the city deems the application complete.

#### **2.2.4 Vesting**

A project is vested under the codes in place on the date when the permit application is determined to be complete by the City. There are some exceptions for Stormwater Permits (see Section 2.2.9). Refer to [MMC](#) 17.13.040 or 17B.13.080 for guidance on complete applications.

A permit that has expired or has been cancelled is no longer vested. If the Applicant wishes to continue with the project, a new application must be submitted and the project will be subject to the regulations in place at the time the new complete application is received by the City.

The City periodically reviews and revises these Standards. In the case that a code or standard has been revised more recently than these Standards, the most current code or standard supersedes the information provided in these Standards.

#### **2.2.5 Permit Review**

The permit review process is a partnership between the Applicant and City representatives. The Community Development Department will review permit submittals or coordinate review with other departments and/or external agencies for compliance with applicable standards following the outline in Table 1- Permit Process Outline.

#### **2.2.6 Plan Approval**

Plan approval does not relieve the Applicant, the Applicant's Engineer, or the contractor from the responsibility for ensuring that all facilities are safe and that calculations, plans, specifications, construction drawings and record drawings with as-constructed information are in compliance with accepted engineering practices, these Standards, and applicable Federal, State, and Local laws and codes.

#### **2.2.7 Plan Revisions**

To help with plan review, the revised plan(s) should include the revision number and date particular to that plan set.

The Engineer of record must stamp, sign, and date revisions to the design prepared under the Engineer's authority.

#### **2.2.8 Independent/Peer Review**

Depending on the site conditions and design complexity, the City may determine that reports require independent (third party) review. The City may retain a qualified licensed professional, at the expense of the applicant, to review and confirm the applicant's reports, studies, and plans.

### **2.2.9 Permit Timing & Expiration**

The following provides general guidelines regarding application and permit expiration. For specific information contact the Community Development Department.

#### **1. Issuance Notification**

- a. Following plan approval, a representative from the Permit Center notifies the contact indicated on the permit application that the permit is ready to issue and of any fees owed.
- b. Following notification, the Applicant has six months to obtain the permit. A permit held more than six months without issuance and with no contact from the Applicant is subject to cancellation.

#### **2. Issued Permit**

- a. Permits are valid for the periods specified by the type of permit in the MMC.
- b. If the proposed work cannot be completed within the time covered by the permit, the Applicant may submit a written extension request to Permit Services for review and approval. Work may continue only with an approved extension request.
- c. The City may assess additional fees for permit renewal and inspection.

### **2.2.10 Public Notification**

For the public notification process associated with a specific type of project, see Mukilteo Municipal Code 17.13.050, or check with the Community Development Department at 425.263.8000.

The City may apply additional noticing requirements to the conditions of the Permit.

## **2.3 Engineering Permit Requirements**

### **2.3.1 Licensed Professionals**

1. State law requires engineering work be performed by or under the direction of a professional engineer licensed to practice in Washington State. Depending on project scope and location characteristics, the Director may require a licensed professional for any project. All credentials shall be current and issued by Washington State.
2. Plans involving construction of retaining walls requiring a permit per Section 2.1.4, Retaining Walls, shall be designed and stamped by a licensed civil engineer, registered in the State of Washington, with relevant experience designing similar types of walls. All reinforced concrete retaining walls shall be designed and stamped by a licensed structural engineer.

3. Plans involving construction of stormwater treatment facilities or flow control facilities, structural source control BMPs, or drainage conveyance systems shall be prepared by or under the direction of a licensed civil engineer, registered in the State of Washington. Cast-in-place concrete stormwater vaults shall be designed and stamped by a licensed structural engineer.
4. All engineering plans and specifications submitted for approval shall be stamped by a professional civil engineer registered in the State of Washington. All site improvement plans and the cover page of the Stormwater Site Plan (Drainage Report) must be signed and dated by the professional engineer approving the design.
5. Construction Stormwater Pollution Prevention Plans (SWPPPs) that involve engineering calculations must also be prepared by or under the direction of a licensed civil engineer.
6. A Washington State licensed civil engineer with geotechnical expertise or an engineering geologist is required for site assessment for site work within or adjacent to slopes steeper than 40 percent and higher than 10 feet. A Washington State licensed civil engineer with geotechnical expertise or an engineering geologist may be required for site assessment for site work within or adjacent to slopes steeper than 15 percent as determined by the Public Works Director per [MMC 15.16.060](#).
7. All land boundary surveys used, and legal descriptions prepared, for preparing preliminary and final engineering plans must be stamped by a professional land surveyor registered in the State of Washington. Topographic survey data and mapping prepared specifically for a proposed project may be performed by the professional engineer stamping the engineering plans as allowed by the Washington State Board of Registration for Professional Engineers and Land Surveyors.

### **2.3.2 Engineering Application Submittal Requirements**

All Engineering Permit Applications require submittal of information necessary to evaluate the proposed project. A complete checklist of these requirements can be found in the City's Engineering Application Submittal Checklist. An Engineering Application is considered complete when all of the following items are received by the City.

1. Completed Engineering Application Submittal Checklist
2. All applicable supporting reports, administrative notices, and plan sets. These may include, but are not limited to:
  - a. Preliminary plat maps,
  - b. Hearing Examiner's reports,
  - c. Preliminary plat approval ordinance,
  - d. SEPA Checklist,
  - e. Notice of Decision,
  - f. Complete plan set of surveyed construction plans,
  - g. Stormwater Site Plan (Drainage Report),



- h. Construction Stormwater Pollution Prevention Plan (as a stand-alone document),
- i. Geotechnical/hydrogeotechnical investigation report for project elements, including stormwater,
- j. Wetland and/or Critical area report,
- k. Evidence of vesting rights,
- l. Transportation impact analysis,
- m. Right-of-way dedication, as it may apply,
- n. Draft of all applicable covenants and easements,
- o. Construction (Civil) plan sets.

If a required item does not apply to the proposed project, the applicant should indicate “N/A” on the Engineering Application Submittal Checklist. City staff will then evaluate whether the items do or do not apply, following the procedure in Section 2.2.3, Determination of Complete Application.

More detail regarding the content of the required submittal items can be found in the City’s Engineering Application Submittal Checklist.

### **2.3.3 Declaration of Covenant / Maintenance Plan**

#### **2.3.3.1 Stormwater**

All plans shall include a covenant for maintenance of the permanent stormwater improvements according to MMC 13.12.160(F). The covenant shall identify the party responsible for maintenance, a site plan showing the stormwater infrastructure, and the maintenance requirements. A signed covenant and maintenance plan shall be submitted with the permit application. The covenant shall satisfy the requirements found in Stormwater Minimum Requirement #9 of the Ecology Manual. The covenant shall be recorded with the Snohomish County Auditor. A conformed copy shall be provided to the City prior to issuance of the final permit.

#### **2.3.3.2 Private Roads / Joint-Use Driveways**

All plans for a private road or joint-use driveways shall include a draft joint use and maintenance agreement to be submitted with the permit application. The agreement shall establish the rights to use the road and a method by which the road shall be maintained. Any changes to the agreement shall be reviewed and approved by the City before being executed and recorded with the Snohomish County Auditor. The land use binder, or similar document shall be recorded with Snohomish County, binding all lots served by the private road or joint-use driveways to conditions/requirements of the joint use and maintenance agreement. A copy shall be provided to the City prior to issuance of the final permit.

### **2.3.4 Easements**

Per MMC 13.12.160(F), for construction of any new private stormwater facilities, the property owner shall grant the City an access easement, satisfactory to the City Attorney, allowing inspection by the City to verify the maintenance conditions. A draft easement is required at the time of permit submittal. The easement shall be recorded with the Snohomish County Auditor. A conformed copy shall be provided to the City prior to issuance of the final permit.

Other easements may also apply to the project, such as, but not limited to, a temporary construction easement, slope easement, utility easements, or retaining wall easement. Details for easement requirements are found in the applicable section(s) of the Mukilteo Municipal Code. A draft easement is required at the time of permit submittal and the permit shall not be issued until the easement has been approved by the City, recorded with the Snohomish County Auditor's office, and a conformed copy provided to the City for their records.

## **2.4 Permit Issuance**

### **2.4.1 Permit Issuance**

Before a permit is issued, all requirements for issuance must be met. These may include proof of liability insurance, financial guarantees, City business license, recorded covenants, easements or dedications, and/or payment of any outstanding fees. When all conditions for issuance are met, and the permit is ready to issue, a representative from the Permit Center will notify the designated contact person that the permit is ready, and what fees are owed.

### **2.4.2 Pre-construction Meeting**

Many projects require a pre-construction meeting. Projects with high sediment transport potential require and on-site pre-construction meeting. The purpose of a pre-construction meeting is to identify key personnel from the City and the Applicant, review City requirements pertaining to construction and inspections, discuss project timing and other items related to the construction of the project. The Permit Center will notify you if your project requires a pre-construction meeting when they notify you that your permit is ready. Construction may begin only after the required pre-construction meeting and the permit has been issued. Typically the permit is issued after the pre-construction meeting is held.

If a pre-construction meeting is not required, but you would like to schedule one, please call the Permit Center at 425.263.8000 and they will facilitate the scheduling with the appropriate staff.

### **2.4.3 Permit Inspections**

1. For more information on inspections, refer to Chapter 6 – Inspection by the City, as well as your issued permit which lists the inspections required for the project.
2. On-site inspections are performed by representatives of the Community Development, Public Works/Engineering, and Fire Departments.

3. An approved set of drawings and all necessary permits shall be posted on the job site whenever work is being done.
4. It is the responsibility for the Permittee to call and schedule inspections. The Public Works /Engineering requires 72 hour advance notice.
5. Some projects may require special inspections performed by qualified third parties, at the cost of the Permittee. If special inspections are required they will be listed as a condition on the issued permit.
6. Re-inspections may have additional fees assessed, according to the City's fee schedule.

#### **2.4.4 Final Project Approval**

The following are required prior to final project approval.

1. **Permanent Stabilization.** All disturbed areas must have permanent stabilization measures in place and functioning before final project approval.
2. **Financial Guarantee.** Maintenance Bonds for Improvements such as, but not limited to, landscaping, frontage improvements, stormwater systems, shall be in place prior to final project approval.
3. **Declaration of Covenant.** Prior to final project approval, executed covenants that have been recorded at the time of permitting are verified to be in conformance with the constructed items.
4. **Conformed Recorded Stormwater Covenant.** Prior to final project approval, a copy of the conformed recorded stormwater covenant shall be submitted to the City.
5. **Conformed Recorded Stormwater Maintenance Plan.** Prior to final project approval, a copy of the conformed recorded stormwater maintenance plan shall be submitted to the City.
6. **Record Drawings (As-Builts).** A registered Professional Engineer or Professional Land Surveyor shall verify that installation of roads and utilities was in accordance with the approved construction plans. Record drawings must be provided for private infrastructure that connects to the City's infrastructure, for public facilities, and for right-of-way work. See Appendix G for Record Drawing requirements.

Once the Record Drawings are approved by the City, the project applicant can schedule the Final Inspection.

7. **Inspections.** All inspections must be completed. Upon completion of all site or right-of-way work and associated conditions approved under a permit, the Permittee shall request a final inspection.
8. **Work Completion.** The permit process is complete upon final inspection and approval by the City.



# Chapter 3 - Surface Water

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This chapter applies to public and private development within the City. It is expressly the purpose of this Chapter to provide for and promote the health, safety, and welfare of the general public through sound development policies and construction procedures that preserve and protect the City's watercourses from development impacts. The intent is to:

- Protect water quality by preserving the designated uses of the water body (as defined in WAC-173-210A);
- Control sedimentation of creeks, streams, ponds, lakes, and other water bodies;
- Reduce impacts to water bodies from changes in hydrology caused by development;
- Protect and enhance the aesthetic quality of the waters;
- Maintain and protect groundwater quantities, locations, and flow patterns;
- Ensure the safety of City roads and rights-of-way; and
- Decrease drainage-related damages to public and private property.

## **3.1 Surface Water Standards**

1. Storm drainage design shall be in accordance with the Stormwater Minimum Requirements for new and redeveloped sites, as established in the adopted Ecology Manual, Mukilteo Municipal Code, and the Development Standards. See Section 1.4 of the Standards for other governing documents and standards.
2. For conveyance system design, refer to Section 3.6, Conveyance Design Standards.
3. For maximum hard surface lot coverage, refer to MMC 17.020.028.

## **3.2 Low Impact Development (LID) Site Design Strategies**

Low Impact Development (LID) principles and strategies are required for site design in Mukilteo. LID principles and strategies identify areas conducive to stormwater management early in the site planning process. By identifying areas with good infiltration potential, and areas for preserving vegetation, a project can reduce the amount of stormwater runoff generated by a project site.

Projects in Mukilteo shall use the initial site inventory and analysis process as a baseline to utilize areas most appropriate to evaporate, transpire, and infiltrate stormwater, and achieve the goal of minimizing the pre-development natural hydrologic conditions on the site by retaining stormwater on-site.

Once the site has been maximized for stormwater benefit, then more traditional “gray infrastructure” can be used to meet remaining flow control and treatment objectives. Emerging technologies are not low impact development techniques.

For detailed guidance on site design practices, refer to Volume I: Chapter 3 and BMP T5.41 Better Site Design of the Ecology Manual, the LID Technical Guidance Manual, and Mukilteo’s LID Practices and Principles.

### **3.3 Low Impact Development Requirements**

The following criteria shall be addressed in project layout and site design:

1. Locate development areas outside of conserved vegetation/habitat/wildlife areas and within designated buildable areas.
2. Layout roads, lots, and other proposed site features to follow topographic contours.
3. Orient residential lots to minimize site disturbance, maximize the benefits of minimal excavation foundation systems; facilitate sheet flow into natural resource protection areas and bioretention facilities; and promote community aesthetics, livability, and privacy.
4. Eliminate stream crossings with roads and conveyance systems whenever possible.
5. Minimize impervious surfaces by reducing building footprints, road length and width, parking areas, and driveways.
6. Use dispersion or infiltration best management practices to diminish or eliminate effective impervious areas by directing stormwater from impervious areas.
7. Integrate small, dispersed bioretention areas to capture, store, and infiltrate stormwater on site.
8. Utilize pervious paving surfaces such as porous pavement or pavers for roads, driveways, parking lots, or other driving or walking surfaces, where feasible.
9. Direct rooftop runoff to infiltration areas, full dispersion systems, or utilize vegetated roof systems to evaporate and transpire stormwater, where feasible.
10. Minimize clearing and grading. Grading should be kept to a minimum by incorporating natural topographic depressions into the development and limiting the amount of cut-and-fill on those portions of the site with permeable soils.
11. Implement BMP T5.13 Post-Construction Soil Quality and Depth.
12. Protect vegetation, including tress and tree root systems, during construction.

### **3.4 General Requirements**

1. All stormwater flow calculations to meet flow control and water quality requirements shall be analyzed using the hydrograph methods and routing procedures approved by the Department of Ecology, or as approved by the Public Works Director or Designee.
2. All storm drainage elements shall be designed to meet all applicable structural and design loads.
3. Emergency overflow provisions shall be installed in such a manner as to direct waters away from all structures without causing failure of those structures. The impact of a system failure should be analyzed both in terms of on-site and off-site effects. The impacts may be to adjacent properties or to elements of the public drainage system or other private systems. Retention/detention and infiltration facility design must take into account overflows which may result from:
  - a. Higher-intensity or longer-duration storms than the design storm;
  - b. Plugged orifices;
  - c. Inadequate storage due to sediment buildup;
  - d. Debris blockage; and
  - e. Other reasons causing system failure.
4. All aspects of public health and safety shall be considered in the stormwater design. Protective measures are often necessary and shall be required whenever deemed appropriate by the Public Works Director or Designee. The protective measures themselves shall be designed so as not to constitute hazards or nuisances.
5. The designer shall consider system reliability in terms of layout, specification of materials, methods of installation and the influence of other activities in the area both during and after construction.
6. The frequency and difficulty of future maintenance should be minimized by thorough consideration of possible failures in the system during design and what would be required to correct the problem. Design adjustments to ease maintenance should be a major consideration.
7. Offsite improvements may be required if on-site controls are insufficient to mitigate impacts due to flooding, erosion, sedimentation, pollution, or habitat degradation.
8. Developer shall meet all applicable federal, state, and local water quality standards prior to discharge to any wetland, stream, river, or lake.
9. The visual impact and other potential problems (mosquito breeding, smell, etc.) should be considered. Concerns will vary with the site environment, but aesthetics should always be of concern to the designer.

### **3.4.1 Basin Planning**

The City does not currently have any adopted watershed or basin plans. Once basin plans are adopted, they can be found on the City's website.

### **3.4.2 Water Quality Sensitivity Areas**

Where the Public Works Director determines that the minimum requirements do not provide adequate protection of water quality sensitive areas, or in watersheds with Total Maximum Daily Load (TMDL) requirements, whether on site or within the drainage basin, more stringent controls may be required to protect water quality.

### **3.4.3 Watercourses**

1. Streams shall be preserved in their existing channels.
2. MMC 17.52 contains additional requirements for critical areas that may apply to a project.
3. Any alteration of water bodies may also require permits from other jurisdictions. It is the Applicant's responsibility to know which permits apply to the project and to obtain all necessary permits.

### **3.4.4 Geologic Sensitive Areas**

Mukilteo has many geologic sensitive areas, including steep slopes, landslide hazard areas, and areas of high liquefaction. Refer to the City's Geologic Sensitive Area map (available at [mukilteowa.gov](http://mukilteowa.gov)) as part of the initial site analysis.

1. Stormwater treatment BMPs, including detention vaults and detention ponds, shall not be built within geologic sensitive areas or their buffers, except for necessary conveyance systems as approved by the Director.
2. All drainage discharge pipe in geologic sensitive areas shall be tightlined to the bottom of the slope, with approved energy dissipaters installed.
3. New tightline conveyance systems installed on slopes steeper than 15% and greater than 20 feet in height, or within a steep slope area, shall be designed with sufficient capacity to convey and contain the 100-year peak flow, assuming full build out conditions for all tributary areas.
4. Infiltration, including infiltration trenches, is not allowed in landslide hazard areas, or within their buffer. The City applies a 50' buffer for infiltration, unless a geotechnical analysis recommends a greater buffer, then that buffer will be applied.
5. Other requirements may also apply, based on the project's geotechnical report.



### **3.4.5 Offsite Drainage Improvements**

The Applicant may provide offsite improvements in the same drainage basin or threshold discharge area to mitigate water quality and flow control requirements associated with the project. These offsite improvements shall provide equivalent water quality and flow control. Additional requirements may apply. Director review and approval shall be required.

### **3.4.6 Storm System Extension Required**

1. The owner of any property which is not connected to the public storm drainage system shall be required to extend any storm drainage line which is within 200 feet of the property (or a distance that is determined by the Director, or designee), and to connect to and use the same for all developed portions of the property, as a condition of any of the following:
  - a. Final approval of a subdivision;
  - b. Final approval of a short subdivision;
  - c. Final approval of a binding site plan for any mobile home park, condominium, planned unit development, industrial park, or shopping center; or
  - d. Any building, grading, paving, or other development approval, including rezones or conditional use permits, which will have a significant adverse impact upon storm drainage; as determined by the Public Works Director or Designee.
2. The Public Works Director or Designee may waive the requirement of 3.4.6, subsection (1) if it is found that the capacity or condition of the existing public storm drainage system is insufficient or inadequate to serve the subject property; or if it would cause a practical difficulty to require the connection of the subject property to the public storm drainage system by reason of circumstances which are unique to the property and not generally shared by other properties in the vicinity.

### **3.4.7 Extension for Full Lot Frontage**

Whenever a property owner desires to connect to the public storm drainage system, the property owner shall be required to extend the storm drainage lines for the full frontage of the lot which is being connected. If it can be shown that no future extensions beyond said lot will occur, a deviation may be obtained from the Public Works Director or Designee, and the owner need only extend the line to the nearest point of connection on the lot.

### **3.4.8 Public Right-of-Way Storm Design for Private Property**

1. Total new and/or replaced hard surfaces shall be calculated as a total for the development, including areas onsite and within public right of way, such as frontage improvements.

2. Stormwater flow control, water quality, or infiltration facilities that serve private property shall not be located in dedicated public road right-of-way areas unless specifically approved by the Public Works Director or Designee.

#### **3.4.9 Subdivisions**

1. The maximum hard surface lot coverage requirements in MMC 17.20.028 shall be used to determine the hard surface area for stormwater design. When the maximum hard surfaces are not known, such as a project where full build out could occur over years, the maximum allowable hard surface in MMC 17.20.028 shall be applied to stormwater controls.
2. If the project proposes smaller site hard surface coverage than allowed under MMC 17.20.028, then these limits shall be required on a binding site plan, plat, or other enforceable document. Allocations for maximum hard surface coverage on each lot shall be specified on said document.
3. Construction of the lot drainage connection systems must be feasible and allow connection to the proposed formal and short subdivision improvements or to the documented infiltration areas.
4. When a subdivision drainage plan includes piped connections, provide a connection stub to each lot. A maximum of three lots may be connected to a common private collection pipe, which shall be six inches or more in diameter. For subdivisions, no more than three (3) roof drain stubs are allowed on a single roof drain collection pipe.
5. Roof and footing drain connection stubs shall be at least one foot below the lowest existing elevation of the building envelope on all newly created lots, unless a different elevation is approved or required by the City.
6. Easements for the specific drainage systems shown on the site development documents must be provided as part of the formal or short subdivision.

#### **3.4.10 Phased Projects**

1. For projects that will be built in phases, the Applicant must provide plans that show the overall project as well as the project phases. The plan shall clearly delineate phase boundaries and provide estimates for construction dates for the phases.
2. Phasing of projects shall not result in a reduction of drainage and erosion control requirements.

#### **3.4.11 Separated Runoff**

1. Sanitary sewer facilities shall be separate from stormwater facilities.

2. Project design must keep runoff from public rights-of-way separate from on-site surface water runoff. Surface water controls for one private property shall not be placed in public right-of-way or on other public property.
3. When in the same threshold discharge area, surface water control requirements for proposed impervious areas may be applied to equivalent existing developed areas of the site, providing those areas do not already have such controls.
4. If the project is managing off-site site run-on, the project can route the off-site run-on around the project without providing any additional flow control or treatment. If the project run-on is co-mingled with the project's stormwater, then the off-site run-on must meet equivalent flow control and water quality treatment requirements.

#### **3.4.12 Backflow Prevention**

The City may require backflow prevention on private stormwater connections to City-owned stormwater trunk lines or to undersized stormwater mains.

#### **3.4.13 Sump Pumps**

Discharge from sump pumps of uncontaminated ground water serving existing development, not connected to any other project permit application, may be allowed to connect to the City's surface water system. An approved engineering permit is required for this connection.

#### **3.4.14 Setbacks**

1. No storm drainage system conveyance element shall be located underneath any structure. With prior written approval by the Director, some private system vaults may be located underneath a structure, provided that adequate maintenance access is provided.
2. All storm drainage elements shall be designed to eliminate interference from underground utilities.
3. A 15' minimum building setback line shall be required from the top of bank of a defined channel.
4. A 10' minimum building setback shall be required for closed drainage systems, as measured from the center of the pipe.
5. All vertical and horizontal setbacks as they relate to infiltration shall follow the Ecology Manual.

### **3.4.15 Regional Ponds**

Several regional ponds were designed as part of historic development master plans in Mukilteo. No existing regional ponds have capacity to receive any drainage associated with new development or redevelopment.

If a new project is proposed in an area that drains to one of these regional ponds, and the project is proposing to meet its stormwater detention requirements by use of the pond, the project applicant shall be required to show how the regional pond and the stormwater modeling is vested by citing the vesting document and page number. Drainage reports, developer agreements, or other non-recorded documents are not evidence of vesting. Further, any project proposing to use a regional pond for detention shall be required to show that there is capacity in the pond for the proposed use, assuming full build out of the contributing area. The modeling method to use shall be the currently accepted model, as approved in the Ecology Manual.

All redevelopment projects shall be required to meet the stormwater requirements of the adopted Ecology Manual and these Development Standards.

### **3.4.16 Pond Fencing**

Detention ponds with side slopes steeper than 3:1 or with a maximum water depth of greater than 3 feet shall require a vinyl coated chain link perimeter and fence. Side slope averaging shall not be allowed.

During construction of drainage facilities and prior to installation of permanent perimeter fence, contractor shall ensure temporary fencing is in place around open cut facilities while construction activities are underway on said facility and/or at the end of each day until placement of the permanent fencing is in place.

### **3.4.17 Stormwater Facility Access and Maintenance**

1. All stormwater facilities shall be accessible to maintenance vehicles. If the facility is not located in or adjacent to an existing access, an improved roadway surface shall be provided.
2. Access roads shall be designed with 40 foot inside radius on curves, grades flatter than 15 percent, and at least 10 feet wide. The access must be designed to carry H2O loading. The approved surfaces include hot mix asphalt (HMA), cement concrete, structurally stabilized vegetated surface, or crushed surfacing.
3. The City may require the maintenance access be located in a separate tract.

### **3.4.18 Easements**

1. If a drainage easement is to run along a lot line within a subdivision, the easement may straddle the lot line provided the drainage facilities can be located entirely within one lot.

2. No stormwater pipe within a drainage easement shall have its centerline closer than 5' to a rear or side property line. The minimum drainage easement width for open and closed channel drainage facilities shall be 20 feet.
3. The City requires an access easement for purposes of inspection of private stormwater facilities. This access easement can be included with the maintenance covenant for recording purposes.
4. Refer to MMC 13.12.16o(F) for other easement requirements.

### **3.5 Ecology Manual Modifications and Clarifications of Minimum Requirements**

This section lists the City's amendments and clarifications to the Ecology Manual. Assume there are no modifications to the Ecology, unless it is listed in this section. When the Ecology Manual states something is "optional" or "up to the jurisdiction," it is a requirement in Mukilteo, unless otherwise noted.

#### **3.5.1 Definitions Related to Minimum Requirements**

For purposes of this Chapter, the term "Minimum Requirement" shall mean "Stormwater Minimum Requirement" as defined in MMC 17.08.

#### **3.5.2 Applicability of Minimum Requirements**

1. All deck types are considered a hard surface. Deck areas shall be included in the calculations for hard surface when determining the Applicability of the Minimum Requirements.
2. Redevelopment Supplemental Guidelines apply as requirements as follows:
  - a. Retrofits are required for replaced impervious surfaces not separated from other runoff and when the value of the improvements (excluding land value) exceed 50 percent of the assessed value of the existing improvements (excluding land value);
  - b. Stop Loss – Does not apply
  - c. Fee-in-lieu – Does not apply

#### **3.5.3 Minimum Requirement #1, Preparation of Stormwater Site Plan**

Stormwater Site Plan submittals shall be in accordance with the adopted Ecology Manual Volume I, Chapter 3 (Preparation of Stormwater Site Plans); as further clarified in Appendix D of the Development Standards.

The SSP must be prepared, stamped and dated by an engineer licensed in the State of Washington.

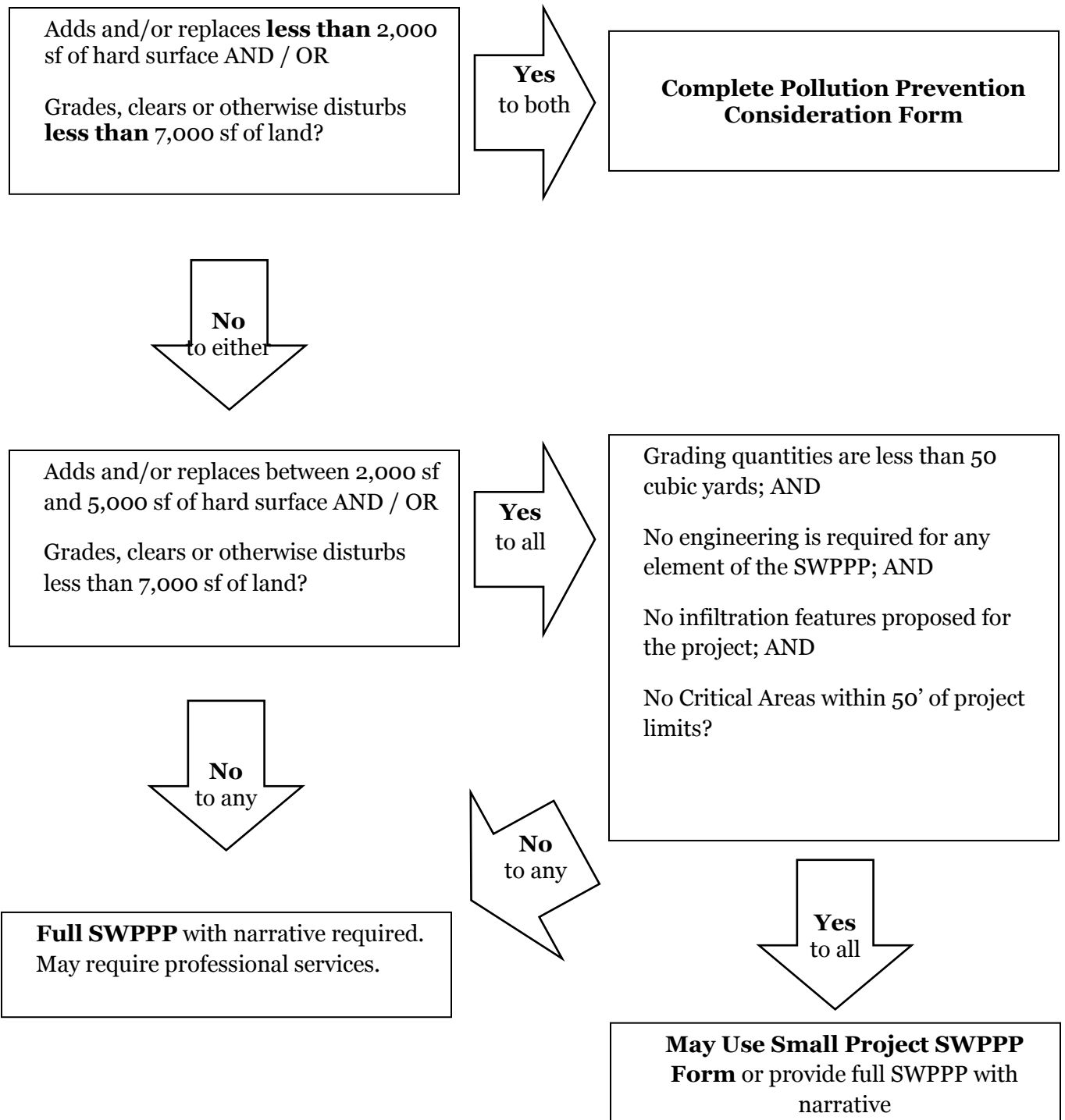
#### **3.5.4 Minimum Requirement #2, Construction Stormwater Pollution Prevention Plan (SWPPP)**

1. The Construction SWPPP shall be prepared as a separate stand-alone document.
2. The Construction SWPPP shall remain on the construction site or within reasonable access to the site for construction and inspection personnel at all times.
3. Projects that propose to disturb soil, and require any type of permit under MMC, shall not have approved permits, until such time as the Construction Stormwater Pollution Prevention Plan (SWPPP), or Pollution Prevention Plan has been approved.
4. The Director may require a designated Certified Erosion and Sediment Control Lead (CESCL) when there will be disturbance on a site that contains or abuts a critical area, or in other high risk situations, even when less than 1 acre will be disturbed.
5. A SWPPP Supervisor shall be designated for all projects where a CESCL is not required. The SWPPP Supervisor shall have the necessary experience to identify and evaluate erosion control measure functions and have the authority to make modifications, as necessary.
6. The SWPPP Supervisor or CESCL is responsible for implementing the SWPPP and ensuring that the project is in compliance with regulations.
7. Contact information for the CESCL or SWPPP Supervisor (whichever applies) shall be provided to the City prior to permit issuance.
8. During construction, the SWPPP shall be revised as necessary by the CESCL or SWPPP Supervisor to address changing site conditions, unexpected storm events, or non-compliance with the SWPPP performance criteria.
9. Work in Critical Areas shall conform to requirements of the City's Critical Areas Ordinance (CAO); MMC 17.52 and MMC 17B.52.

##### **3.5.4.1 SWPPP Thresholds and Resources**

The Thresholds of the Ecology Manual for Construction SWPPPs shall apply. Figure 1 - Applicable Project SWPPPs, identifies Small SWPPP Projects and Medium SWPPP Projects. Checklists for Small SWPPP Projects and some Medium SWPPP Projects are available.

**Figure 1. Applicable Project SWPPPs**



### **3.5.4.2 Wet Weather Erosion Control Plan Requirements**

1. The wet season is October 1 through April 30.
2. An active Wet Weather Erosion Control Plan shall be provided for projects that meet the following thresholds:
  - a. Propose active clearing, grading, or soil disturbance of 1,000 square feet or more; or
  - b. Anticipate more than 1,000 square feet of exposed soil during the wet weather; or
  - c. Have area(s) that drain, by pipe, open ditch, sheet flow, or a combination of these to a tributary water, and the tributary water is one-quarter mile or less downstream; or
  - d. Have slopes steeper than 15 percent adjacent or on-site; or
  - e. Have high potential for sediment transport, as determined by the Construction Site Sediment Transport Potential Worksheet; or
  - f. Have a critical area or critical area buffer on-site, or within 50 feet of the site; or
  - g. Have high groundwater table or springs.
3. The Wet Weather Erosion Control Plan (or Wet Weather Construction Plan) is required to be submitted for review and approval, on or before September 1st (MMC 15.16.16o).
4. Minimum Requirements of the Wet Weather Erosion Control Plan include the following:
  - a. Daily inspections of erosion control measures by contractor; and
  - b. Daily reports of erosion control measure inspections, including:
    - i. Weather at the time of inspection,
    - ii. Performance of the control measures, and
    - iii. Adjustments made to any control measures; and
  - c. On-site stockpile of cover materials in quantities sufficient to cover 50 percent of disturbed areas; and
  - d. On-site stockpile of at least 50 linear feet of silt fence (and the necessary stakes) per acre of disturbance; and
  - e. Cover on all disturbed, unworked areas; and
  - f. Contingency plans for controlling spills and other potential pollutants which have been developed and are ready to implement (including materials stockpiles) at the construction site; and



- g. Designated point of contact, available 24 hours a day, seven days a week (24/7) that can call out and direct crews, obtain materials, and authorize immediate expenditures for on-site temporary erosion prevention and sediment control work; and
  - h. Compliance with all project approval conditions and permits (including Hydraulics Project Approval from Washington State Department of Fish and Wildlife and the Washington Department of Ecology NPDES Permit); and
  - i. A Certified Erosion Sediment and Control Lead (CESCL), with a current certificate from the Department of Ecology, shall be required and designated for projects requiring a Wet Weather Erosion Control Plan.
5. If a Wet Weather Erosion Control Plan is not approved, and / or a project is not continuing work through the Wet Season, then the Applicant shall prepare a Wet Weather Suspension Plan for review and approval by the Director by September 1st of that year. If one is not provided by the required deadline, the City may enforce implementation through the Municipal Code.

#### **3.5.4.3 Wet Weather Suspension Plan**

- 1. When wet weather work is to be voluntarily suspended, or is otherwise prohibited, the Applicant shall provide a Wet Weather Suspension Plan for review and approval by the Director. The plan shall be submitted to the City no later than September 1 and must be implemented and inspected by the City no later than September 30. (The Applicant is responsible for contacting the City for inspection.)
- 2. The Wet Weather Suspension Plan shall include the following:
  - a. CESCL, or other qualified individual (with contact information) having the authority to direct implementation of additional measures or maintenance and repair of existing measures; and
  - b. Weekly inspections by applicant, to be submitted to City; and
  - c. Erosion prevention and sediment control that protects all disturbed areas; and
  - d. Areas that are to be unworked during the wet season shall be seeded and mulched by September 30; or
  - e. Cover measures shall be installed on all disturbed areas where seeding is not well established; and
  - f. All soil stockpiles and steep cut-and-fill slopes shall have cover measures; and
  - g. Construction road(s) and parking lots shall be stabilized; and

- h. On-site stockpile of cover materials sufficient to cover 50 percent of disturbed areas; and
  - i. On-site stockpile of at least 50 linear feet of silt fence (and the necessary stakes) per acre of disturbance; and
3. When clearing and grading during the wet season is prohibited, building construction can proceed as long as clearing and grading is halted, all exposed soils and stockpiles are covered, and the Wet Weather Suspension Plan is in place and being maintained.

#### **3.5.4.4 Construction SWPPP Elements**

The following requirements apply to projects in Mukilteo, in addition to the 13 Elements of the Ecology Manual.

##### **Element 2 – Establish Construction Access**

1. Off-site streets shall be kept free of dirt and mud originating from the construction site.
2. Street washing is not allowed, even after shoveling or sweeping. Regenerative vacuum street sweepers are allowed.
3. During construction, if material is being deposited on off-site streets, or entering the storm drainage system, the following may be required, as determined by the City inspector:
  - a. Regenerative-type vacuum sweepers and repeated or continuous sweeping; or
  - b. Wheel wash (or an improved wheel wash if one already exists); or
  - c. Special site procedures and provisions (such as transferring haul-outs to trucks that travel only on paved and maintained surfaces in the site); or
  - d. Suspension of work until dry weather. In this case, a Wet Weather Suspension Plan shall be required.

##### **Element 4 – Install Sediment Controls**

Site runoff turbidity shall not exceed 25 NTU or 5 NTU above background for all construction sites; even those that do not have a Construction NPDES Permit.

To determine background, measure turbidity upstream of the site and compare it to turbidity leaving the site. If no background measurement is taken prior to commencement of the project, it shall be assumed that the background NTU is zero (0). If the standard is not being met, additional BMPs (including site-specific designs) shall be applied. If additional BMPs are not applied or are not successful, work may be suspended until the City approves a new SWPPP.

### **Element 5 – Stabilize Soils**

1. Runoff from areas not under construction shall not flow over disturbed soils;
2. Disturbed soils that are not actively being worked shall remain covered;
3. Permanent cover shall be installed on all areas at final grade;
4. Dust shall be controlled and shall be in compliance with the Puget Sound Clean Air Agency; and
5. All projects must implement BMP T5.13 Post-Construction Soil Quality and Depth.

### **Element 7 – Protect Drain Inlets**

The Contractor shall remove inlet protection at the end of the project without releasing captured sediment into the storm system. Permits will not be finalled until the inlet protection is removed.

### **Element 8 – Stabilize Channels and Outlets**

Temporary conveyance channels shall be stabilized for the 10-year, 24-hour frequency storm, and assuming full build out of tributary area(s).

### **Element 12 – Manage the Project**

If the standards are not being met, additional BMPs (including site-specific designs) shall be implemented. If additional BMPs are not implemented or are not successful, work may be suspended until the City approves a new SWPPP.

If construction is being phased, the Director may require separate SWPP Plans to address the specific needs for each phase of construction.

See additional requirements under Wet Weather Erosion Control Plan (Section 3.5.4.2).

### **Element 13 – Protect Low Impact Development BMPs**

A written plan, identifying the LID protection measures to be taken shall be provided in the SWPPP. If the contractor proposes an alternative, it shall be presented, in writing, to the City prior to permit issuance.

Projects with proposed infiltration BMPs shall require an on-site pre-construction meeting.

#### **3.5.4.5 Construction BMP Standards and Specifications**

Appendix A of the Development Standards contains some standards and specifications for typical erosion control BMPs. If the BMP does not exist in the Mukilteo Development Standards, the plan set shall reference those found in Volume II of the Ecology Manual. Wherever any of these BMPs are to be employed on a site, clearly reference the specific title and number of the BMP in the narrative and mark it on the drawings.

Where appropriate BMPs do not exist, experimental practices may be considered or minor modifications to standard practices may be employed. Such practices must be approved by the City before implementation.

#### **3.5.4.6 Stop Work**

If the City issues two stop-work orders for insufficient erosion prevention and sedimentation control during wet weather, all permitted activity will be suspended until the dry season. If violations occurred in the dry season, the permitted activity will be suspended until weather conditions are favorable and effective erosion and sedimentation control is in place. The suspension will be removed at the end of the wet weather season or upon the City's determination that appropriate BMP's have been installed and are working, and that the Permittee has adequate resources and abilities to manage BMPs effectively without further discharges.

#### **3.5.5 Minimum Requirement #3, Source Control of Pollution**

Structural and operational source control BMPs (as identified in Volume IV of the Ecology Manual) that apply to the specific uses shall be identified in the Stormwater Site Plan and shall be required. For example, Storage of Liquid, Food Waste, or Dangerous Waste Containers (BMP S427) shall be required for properties that have liquid waste containers on site. These are in addition to any water quality treatment requirements that may apply under Minimum Requirement #6.

#### **3.5.6 Minimum Requirement #4, Preservation of Natural Drainage Systems and Outfalls**

The Supplemental Guidance shall be a requirement in Mukilteo.

#### **3.5.7 Minimum Requirement #5, On-site Stormwater Management**

1. Due to the geologic and topographic conditions in Mukilteo, not all sites are suitable for stormwater infiltration. Refer to the City's Geologic Sensitive Areas Map to determine whether your location has landslide hazards or other limiting factors for infiltration.
2. All proposed infiltration facilities require on-site subsurface exploration. For projects using List #1, List #2, or the Low Impact Development Performance Standard, results from a Pilot Infiltration Test (PIT) shall be required as evidence for infiltration rates. Grain size analysis is not adequate evidence.
3. Infeasibility criteria for infiltration vary with each infiltration BMP. Infeasibility criteria are found in the Ecology Manual, under each BMP.
4. For each item on List #1 and List #2, when citing infeasibility criteria, cite the specific evidence to support the infeasibility criteria.

5. With lower infiltration rates, underdrain systems can be installed in the base of the facility to accommodate water that exceeds the infiltration capacity of the surrounding soil. There are no known phosphorous sensitive water bodies in the City.
6. Infiltration testing must be performed under the direct supervision of or by a licensed geotechnical professional.
7. Decks shall be treated and modeled according to the proposed underlying surface. For example, if the underlying surface is a hard surface (i.e. paving, gravel, or similar), it shall be treated according to the list for "Other Hard Surfaces," or modeled as such. If the underlying surface is soil and will remain open (i.e. no deck enclosure), then it shall be treated as a lawn and landscaped area, with BMP T5.13 applied.

### **3.5.8 Minimum Requirement #6, Runoff Treatment**

1. The Supplemental Guidance of the Ecology Manual is required.
2. Activities in Special Drainage Areas shall meet additional drainage requirements as designated by the Director.
3. A coalescing plate separator shall be required for oil/lube shops, vehicle repair, wash bays, car washes, and any other applications deemed necessary by the Director. For fueling stations an oil stop valve (OSV) such as the AFL/Clark OSV or approved equivalent shall be installed in a manhole or other approved structure prior to the coalescing plate separator.
4. Tees & elbows will not be approved as an oil control device. Sites requiring oil control devices will be required to install a coalescing plate separator or storm filter type device for oil control and or additional controls deemed necessary by the Director.
5. The City accepts the use of some emerging technologies, as summarized in Table 2, Use of Emerging Technologies. Proposed use of an emerging technology must be listed on either the Washington State Department of Ecology's Technology Assessment Protocol (TAPE) or Chemical Technology Assessment Protocol (CTAPE). The City accepts technologies with General Use Level Designation (GULD) through TAPE or CTAPE.

Conditional Use Level Designation (CULD) or Pilot Use Level Designation (PULD) technologies shall meet the deviation requirements in Section 1.5.1. In addition, the deviation request shall show that there is no GULD-approved technology or other option that would provide equivalent treatment. The deviation request shall show how all conditions applied by Ecology through TAPE are to be met with the project. This may include evidence that the manufacturer has approved (in writing) the proposed design and/or that the manufacturer has agreed in writing to collect data and/or provide inspection and maintenance services for the timeframe specified in the conditions.

**Table 2 - Use of Emerging Technologies**

<b>Ecology's TAPE Designation</b>	<b>City's Review and Approval Process</b>	<b>Mukilteo Conditions of Use</b>
<b>General Use Level Designation (GULD)</b>	Approved for use via Development Standards	1) Meet Ecology's conditions (may require maintenance bond) 2) If media replacement is not specified in maintenance manuals, then media replacement will be required at specified intervals.
<b>Conditional Use Level Designation (CULD)</b>	Deviation Request Required, per Section 1.5  Approval by Director required	1) No GULD technology if equivalent treatment to CULD proposal exists; 2) Must meet Ecology's conditions (may require maintenance bond); 3) Evidence of written agreements with manufacturer required; and 4) Other conditions may apply
<b>Pilot Use Level Designation (PULD)</b>	Deviation Request Required, per Section 1.5  Approval by Director required	1) Same conditions of use as CULD; 2) No CULD if equivalent treatment exists; 3) Additional permit fees may apply; and 4) Longer review and approval time may be required; due to required agreements with Ecology

**3.5.9 Minimum Requirement #7, Flow Control**

1. Maximum allowable release rates from stormwater detention systems shall be based upon the allowable release rates as specified in the Ecology Manual. The allowable release rate may be decreased by the Director on a case-by-case basis due to known constraints in the drainage system downstream.
2. The pre-developed condition shall be modeled as forested land cover in all cases, unless the standard requirement is waived for sites that will reliably infiltrate all the runoff from hard surfaces and converted vegetation areas.
3. Hydrologic modeling shall conform to the Ecology Manual: Vol. III.
4. Activities in Special Drainage Areas shall meet additional drainage requirements as designated by the Director.
5. Direct Discharge Exemption: the Director may approve an exemption to flow control detention, provided the project proposal includes analysis showing that the existing or proposed conveyance system meets all the requirements in the Ecology Manual for direct discharge, and: 1) the system conveys the 100-year frequency peak event for the entire basin without surcharging catch basins above the catch basin rim; and 2) the 100-year frequency event does not flood proposed buildings or any existing on-site or off-site buildings.

The analysis shall consider full build-out conditions, based on current zoning using the direct discharge option for flow control for those parcels that drain to the conveyance system. The analysis shall consider both conveyance impacts to the system down gradient of the proposed project and also the project's backwater impact to upstream and lateral flood stages in the conveyance system.

### **3.5.10 Minimum Requirement #8, Wetlands Protection**

Wetlands constructed as mitigation shall be assumed to provide the functions they were designed for, under the classification system at the time. For example, if wetland mitigation assumed replacement of function of a Category II wetland, it shall be treated as a Category II wetland for purposes of Wetlands Protection. If an applicant disagrees with a classification that is more than ten (10) years old, a request can be made to the Director to have the wetland re-evaluated (at the applicant's expense).

### **3.5.11 Minimum Requirement #9, Operation and Maintenance**

Applies with the following modifications:

1. For public facilities built by private development, a copy of the draft operations and maintenance manual shall be submitted with the permit submittal for review and approval. The final O&M manual shall be submitted for review and approval prior to acceptance of the completed construction project. The final approved O&M manual shall be submitted with one hard copy and one electronic copy on CD.
2. For private facilities, the operations and maintenance manual (O&M Manual) shall include provisions for maintenance of BMPs and facilities in perpetuity, and be included in the covenant, as required in MMC 13.12.160(F). This document can also include the City's access easement, as required under MMC 13.12.160 (F).
  - a. Before final permit approval, the Permittee shall submit a conformed copy of the Covenant and Easement recording to the City
  - b. The operations and maintenance manual shall include all of the following:
    - i. The party/parties responsible for facility maintenance, including lots whose owners will be responsible for maintenance in subdivisions;
    - ii. Maintenance cost distribution for shared stormwater best management practices and drainage facilities;
    - iii. Site map showing BMPs, critical area(s), buildings, affected lots, and dimensions;
    - iv. Required inspection and maintenance activities and schedule for each BMP or facility;

- v. List of any proprietary components along with vendor's contact information and the vendor's maintenance schedule and costs;
- vi. Care and maintenance of any powered devices (e.g. pumps, aeration); Inspection procedures and how the maintenance schedule will be modified if inspections determine the facility is not operating properly;
- vii. Incorporation of any comments made during the development review process, and incorporation of any field changes made to the facilities during construction.

### **3.5.12 Optional Guidance**

#### **1. Optional Guidance #1, Financial Liability**

Section 1.6 of the Standards provides requirements for Financial Guarantee information for work performed within the right-of-way, or for construction of any drainage facility that is to be assumed by the City.

#### **2. Optional Guidance #2, Off-Site Analysis and Mitigation**

Preliminary analysis shall be qualitative. Refer to Volume I, Chapter 3.1.3 in the Ecology Manual. The City may require quantitative analysis and mitigation based on the results of the downstream analysis.

## **3.6 Conveyance Design Standards**

All stormwater flow calculations for capacity and conveyance shall use the rational method, assuming no storage features within the basin, at full build out.

Closed drainage systems or culverts on a major stream or creek as determined by the Public Works Director, or designee, shall be designed to convey flows from a one hundred year recurrence storm event. All other closed drainage systems shall be designed to convey flows from a twenty five year recurrence storm event, unless otherwise required by the Public Works Director or Designee.

Conveyance Standards shall apply to all conveyance built on City property or within the right-of-way. The conveyance standards may also apply to private development, if required by the Director.

### **3.6.1 Storm Conveyance Pipes and Culverts**

The standards outlined in Section 3.6.1 do not apply to stream crossings or detention systems.

- 1. Minimum pipe size shall be 12-inch diameter. Eight-inch diameter may be permitted on cross street laterals to avoid utility conflict or meet shallow gradient.



2. The following pipe types are allowed in the right-of-way:
  - a. Polyvinyl chloride (PVC)
  - b. Lined corrugated polyethylene (LCPE)
  - c. Smooth wall polyethylene (SWPE)
  - d. High density polyethylene (HDPE)
  - e. Ductile iron, for areas where existing improvements prohibit required cover on other pipe materials.
3. All pipe types shall meet the specifications outlined in Section 9-05 of the WSDOT Standard Specifications. All pipes shall meet AASHTO specifications
4. When required by the City, PVC, LCPE and SWPE shall be tested using the deflection test procedure described in Section 7-17.3(2) G of the WSDOT Standard Specifications. Pipe sections failing the mandrel test shall be replaced, except that reshaping SWPE and LCPE sections to meet requirements may be allowed if the original deformation is less than 20 percent.
5. All jointed pipes shall be gasketed and securely banded, if applicable.
6. If the depth to the top of pipe exceeds six feet, the City shall select the pipe material.
7. Bevel the projecting ends of culverts within the right-of-way per COM Standard Plans SW-013 and SW-014.
8. Concrete, corrugated aluminum, and corrugated steel are not allowed in the right-of-way.

### **3.6.2 Pipe Zone Bedding and Backfill**

Backfill shall comply with Section 7-08.3(3) of the WSDOT Standard Specifications for Road, Bridge, and Municipal Construction with the exception that the second paragraph of Section 7-08.3(3) is deleted and replaced with:

The material used for backfilling around and to a point 1 foot above the top of the pipe shall be clean earth or sand, free from clay. Any gravel or stones included in the backfill shall pass through a 1 inch sieve.

### **3.6.3 Catch Basins and Junctions**

1. Catch basins shall be spaced no greater than 150 feet.
2. Where the width of the tributary road surface exceeds 35 feet, the cross slope exceeds four percent, catch basin spacing analysis is required. The analysis must show the depth of water at the edge of the traveled way does not exceed 0.12 feet or extend more than

five feet into the traveled way for the 10-year storm event, using flows generated by the rational formula.

3. New catch basins shall be constructed and installed in conformance with COM Standard Plans SW-001 through SW-004, and SW-010.
4. Connections to pipe systems may be made without placing a catch basin or manhole on the mainline provided all of the following conditions are met:
  - a. The mainline pipe is 48 inches or greater and at least two times the size of the connecting pipe.
  - b. All connections shall be performed in accordance with the manufacturer's recommendations. Standard shop fabricated tees, wyes and saddles shall be used.
  - c. Concrete pipe connections shall be constructed in accordance with COM Standard Plan SW-019.
  - d. There shall be a catch basin or manhole on the connecting pipe within two to ten feet of the external wall of the main line.
  - e. Offset angle of connecting pipe to mainline, horizontally and vertically, shall be less than 45 degrees.
  - f. Two-point survey control shall be used to set catch basin locations.
5. Connections to an existing system shall avoid directing project runoff through downstream quality/quantity control facilities. Receiving systems may have separate conveyance facilities: one connecting to quality/quantity facilities and one by-passing them. Connection shall be to the bypass system where available.
6. Type 2 catch basins shall be used when the depth to the invert of the pipe exceeds five feet or the nominal diameter of the pipe is greater than 18 inches.
7. Manholes may be used in lieu of catch basins if they do not collect surface water. Manholes shall be constructed and installed in conformance with COM Standard Plans SW-009 and SW-010.
8. Roof and yard drains, or other concentrated flow from adjacent property shall not discharge over the surface of roadways or sidewalks.
9. Catch basins or manholes are required when joining differing types of pipes.

#### **3.6.4 Frames, Grates, and Covers**

1. Vaned grates with standard frames are required in the traveled way, gutter, or shoulder. Vaned grates shall not be located within cross walks.

2. At sag vertical curves, or before intersections with a grade 3% or greater, use through curb inlet frames. Where through curb inlets cannot be used, three vaned inlets shall be used. One shall be located at the approximate low point and another on either side at 25 foot horizontal spacing, but not greater than 0.1 foot above the low point.
3. New & existing catch basins that do not or no longer collect runoff shall use or be replaced with locking frame and solid covers. If located in pedestrian access routes, non-slip lids shall be used, per 4.7.14.7.
4. All storm drain covers and grates shall be locking. Manufacturer as approved by the City.
5. Where vertical concrete curbs or extruded curbs are used, catch basin frames and grates shall be installed in accordance with Standard Plan SW-007.
6. Slit drains may be used when approved by the City. At a minimum slit drains shall have catch basins at either end unless used as a driveway culvert. The maximum distance between catch basins along a slit drain shall be 50 feet.

### **3.6.5 Outlets and Inlets**

1. Debris and trash racks shall be installed on inlet and outlet piping where trash removal is warranted. Construct and install in accordance with Standard Plans SW-013 through SW-016.
2. Outfall protection (energy dissipater) is required at all outfall locations. All outfalls must be provided with an appropriate outlet/energy dissipation structure such as a diffuser tee, gabion outfall, or rock splash pad. No erosion or flooding of downstream properties shall result from the discharge. Table 3 outlines the minimum outlet energy dissipation structure dimensions for given velocities.

**Table 3 – Minimum Required Outlet Energy Dissipation**

Discharge Velocity at Design Flow in Feet per Second (fps)	Required Protection (Minimum Dimensions)				
	Type	Thickness	Width	Length	Height
0 - 5	Rock lining(1)	1 foot	Diameter + 6 feet	8 feet or 4 x diameter, whichever is greater	Crown + 1 foot
>5 - 10	Riprap(2)	2 feet	Diameter + 6 feet or 3 x diameter, whichever is greater	12 feet or 4 x diameter, whichever is greater	Crown + 1 foot
>10 – 20	Gabion outfall	As required	As required	As required	Crown + 1 foot
>20	Engineered energy dissipater required				

**NOTES:**

(1) **Rock lining** shall be quarry spalls with gradation as follows:

- Passing 8-inch square sieve: 100%
- Passing 3-inch square sieve: 40 to 60% maximum
- Passing 3/4-inch square sieve: 0 to 10% maximum

(2) **Riprap** shall be reasonably well graded with gradation as follows:

- Maximum stone size: 24 inches (nominal diameter)
- Median stone size: 16 inches
- Minimum stone size: 4 inches

Riprap sizing is based on outlet channel side slopes of approximately 3:1.

### **3.6.6 Drop Structures**

Drop structures shall only be allowed where approved by the Public Works Director. Generally, drop structures will not be approved if the drop is less than five feet.

### **3.6.7 Rockeries/Retaining Walls Crossing**

Stormwater infrastructure shall not cross under rockeries or retaining walls, unless a deviation request is approved by the Public Works Director. Stormwater infrastructure that passes under a retaining wall or rockery, shall either be sleeved or constructed of ductile iron. Footing drains associated with rockeries and retaining walls shall connect to an approved outfall.

### **3.6.8 Ditch Standards**

1. Where open ditch construction is used to handle drainage within the subject property, a minimum of 15 feet shall be provided between any structures and the top of the bank of the defined channel.
2. In open channel work, the water surface elevation shall be indicated on the plan and profile drawings. The configuration of the finished grades constituting the banks of the open channel will also be shown on the drawings.
3. Proposed cross-section of the channel shall be shown with stable side slopes. Side slopes shall not be steeper than 3H:1V unless stabilized in some manner approved by the Public Works Director or Designee.
4. The 100-year water surface elevation of the design flow shall be shown on the cross-section.

### **3.6.9 Ditch Modifications**

1. GENERAL GUIDELINES: Roadside ditches are an integral part of some roads. These ditches can provide a valuable benefit to the public by improving water quality and lowering peak run-off rates. In the absence of a full standard street with its engineered drainage pipe system, it is considered in the best interest of the public to keep these ditches in an open state to the maximum extent possible. Ditches are not maintained for aesthetic value; they are maintained to meet drainage requirements.
2. Requests for ditch closures shall be judged by the following criteria:
  - a. Ditches having 10 percent or flatter longitudinal slopes shall remain open. The City may approve enhancement when a drainage swale design is proposed. The following are specific exceptions:
    - i. A reasonable use of the adjacent property is not possible, specifically culvert installations that are necessary to provide driveway access; or
    - ii. Harm or threat of harm to public health, safety and welfare, the environment, or public and private property is a risk unless the exception is approved; or
    - iii. When required as part of required frontage improvement with development.
  - b. Ditches steeper than 10% and subject to erosive velocities are higher candidates for enclosure.
  - c. Street protection and protection of adjacent properties from flooding. The ability of the system to adequately drain the pavement, its subgrade, or manage upslope run-on must be considered.

3. All ditch modification (closure) applications, that are not part of required frontage, must be accompanied by a deviation request.
4. If ditch closure is approved, the following criteria apply:
  - a. An engineering permit is required.
  - b. The design must be prepared by a Washington State licensed professional engineer.
  - c. The property owner is responsible for the cost of permit, engineering, materials, labor, and equipment required for the installation.
  - d. Minimum pipe diameter (interior) shall be 12 inches. Depending on conveyance requirements or other conditions, larger pipes may be required. Conveyance calculations may be required to determine pipe size.
  - e. Install a catch basin:
    - i. At low points that drain to the ditch,
    - ii. At locations where roof downspouts, footing drains or other surface water piping connects to the ditch,
    - iii. Where pipe grade changes, or
    - iv. When the pipe run is 150 feet or greater.
  - f. Once the pipe is installed and covered, the disturbed areas must be graded such that any runoff from the road and private property is directed to a catch basin or open ditch.
  - g. Cover the graded area using at least four inches of compacted 5/8" minus crushed rock. Other surfacing material can be proposed, but must be approved by the Director prior to permit issuance.

### **3.6.10 Roof Drains – Modifications of Existing Single Family Residential**

Connecting roof drains from an existing structure (when no other site work is proposed) to the City's storm drainage system may be allowed with an approved Engineering Permit, as a separate, stand-alone project, provided the following criteria are met:

1. Roof drains shall not be connected to the sanitary sewer.
2. Evidence is provided that there is a drainage problem on the property, caused by the downspouts.

3. The property owner provides evidence that the existing roof drains are functioning properly (this may require evidence of service), and that any recent maintenance has not solved the drainage problem.
4. Evidence is provided that there is a risk of flooding of infrastructure, either on-site, or downstream, without tying into the City's storm drainage system.
5. Evidence is provided that there is a feasible location for the property to tie into the City's storm drainage system. This may require placement of additional infrastructure, if none currently exists.
6. Evidence is provided that the project is not proposing to discharge onto a steep slope.
7. Any additional information, as required by the Director.





# Chapter 4 - Right of Way

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## **4.1 Design Standards and Companion Documents**

Design detail, construction workmanship, and materials shall be in accordance with all Standards as outlined in Section 1.4.

## **4.2 Deviation from Engineering Standards**

See Section 1.5 of the Standards.

## **4.3 General Requirements**

This section provides general requirements related to right-of-way and transportation improvements.

### **4.3.1 Americans with Disabilities Act**

All designs shall meet the current Americans with Disabilities Act (ADA) requirements and standards. In the event field conditions prohibit meeting the ADA requirements, the applicant's Engineer must submit documentation that the design meets the ADA to the maximum extent feasible.

### **4.3.2 Low Impact Development**

The City's Stormwater requirements apply to onsite improvements as well as improvements in the right-of-way. Refer to the [Ecology Manual](#) and Chapter 3 of the Standards to ensure right-of-way work meets the requirements.

### **4.3.3 Tree Removal/Pruning**

Tree removal and pruning in the right-of-way is regulated by the City. For information on the process please contact the City at 425.263.8000.

### **4.3.4 Connectivity**

Street, pedestrian and bicycle routes shall provide connectivity to adjoining development(s) or their anticipated locations where adjoining property is not yet developed. The connectivity may be in a public easement on private property or a Tract dedicated to the City of Mukilteo.

### **4.3.5 Underground Utilities**

The following applies to the connection from the distribution lines in the right-of-way to the property it serves (service connection):

1. If the existing service connections in an area are underground, new service connections must be underground.
2. Existing overhead facilities, including utility poles will be allowed to remain above ground until one of the following events:
  - a. The Public Works Director designates for undergrounding a capital improvement or public works project;
  - b. An entity instigates a joint trenching project that could reasonably serve to replace existing overhead facilities.
3. All new commercial/industrial projects shall underground the service connection to the property.

#### **4.3.6 Frontage Improvements**

In accordance with [MMC 15.04.060](#), private capital shall bear the burden of improving the abutting rights-of-way to mitigate impacts of the development. When a development proposal triggers frontage improvements, existing frontage improvements shall be upgraded to current standards. The frontage improvements run the full length of the property line/right-of-way line. Transitions to existing conditions shall occur outside the development frontage.

Standard frontage improvements consist of right-of-way dedication, curb, gutter, sidewalk, curb ramps, landscaping, drainage improvements, and pavement overlay up to one-half of each right-of-way abutting a property. Appendix F – Street Matrix defines street widths, sidewalk widths, planter strip widths, and other right-of-way requirements for streets. If a listed street does not define the widths in the Street Matrix, see #2 below.

If the street is not included in the Street Matrix, then the following applies:

1. If the street has current amenities such as sidewalk, landscaping, curb and gutter, and/or center lanes, etc., the Public Works Director, or their designee, will determine if frontage requirements are required and whether the project is exempt from the deviation process.
2. If the street is listed in the Street Matrix and does not have the cross section listed, and does not have current amenities, a determination of the appropriate cross-section for a given street will be made upon written request of the Director. The Director's written determination will be valid for one year to allow time for project design and complete application submittal.

Additional improvements may be required to ensure a safe movement of traffic, pedestrians, bicycles, transit, and non-motorized vehicles. The improvements can include, but are not limited to, transit bus shelters, bus pullouts, multi-use paths, utility undergrounding, street lighting, signage, channelization, and additional curb ramps.

Required frontage improvements shall be installed, inspected, and approved by the City prior to the final approval of the related building/planning/engineering permits and before a Certificate of Occupancy is issued.

#### 4.3.7 Right-of-Way Dedication

The width of street right of way to be dedicated to the City shall comply with Table 4 – Minimum Right-of-Way Requirements. When a proposed subdivision, short subdivision, or development proposal is abutting an existing street or streets with a right-of-way of lesser width than specified, for the respective street classification, the developer shall be required as a condition of approval of the development to dedicate the additional right-of-way width.

**Table 4 – Minimum Right-of-Way Requirements**

	Principal Arterial	Minor Arterial	Urban Collector	Local Access	Private Street
Right-of-Way	80 feet	80 feet	80 feet	60 feet	3-6 Lots – 35 foot wide tract 7+ Lots – 40 foot wide tract

The City may require dedication of right-of-way in excess of the above standards in the following cases, where additional width is necessary to:

1. Maintain continuity with the adjoining rights-of-way;
2. Maintain alignment with adjoining streets and sidewalk improvements;
3. Insure that streets intersect at close as is practical to right angles;
4. Provide additional right-of-way as outlined in the City's Comprehensive Plan, By The Way (BTW) Plan, and/or Transportation Plan for new or expanded motorized/non-motorized facilities.

#### 4.3.8 Illumination

Inside City limits street lighting is owned and maintained by the City, WSDOT, or Snohomish County PUD, dependent upon the location. To determine illumination requirements contact the City at 425.263.8000.

#### 4.3.9 Curbing

Curb and gutter shall be Cement Concrete Traffic Curb and Gutter per the WSDOT Standard Plan on all street classifications. Twenty-four (24) inch wide curb and gutter may be used for uniformity or replacement, and rolled curb is prohibited unless it replaces or matches existing and it is approved by the Public Works Director.

Extruded curb is not allowed in the public right-of-way, unless it is temporary and it is approved by the Director.

#### **4.3.10 Pavement Cut Moratorium for Utility Work**

A utility doing work such as system repair or expansion within the right-of-way cannot cut any street that has been constructed, reconstructed, resurfaced, overlaid, or paved within the past five years unless:

1. A deviation to the standards is approved; or
2. It is allowed through a valid franchise agreement; or
3. It is an emergency situation as defined in [RCW 19.122.020](#). A right-of-way permit shall be applied for within one working day following the emergency.

This moratorium does not apply to utility service installation required for new development or redevelopment. See Section 5.15 for pavement restoration requirements for cuts allowed under this section.

### **4.4 Transportation Concurrency and Impact Fees**

The City requires all development activities on land within the City of Mukilteo to meet concurrency requirements as outlined in [MMC](#) 17.15 and pay transportation impact fees per [MMC](#) 3.107.

#### **4.4.1 Concurrency Management System**

No development shall be approved that causes the average level of service on any roadway, on any critical roadway segment, or at any intersection during the p.m. peak hour to decline below the standards adopted in the transportation element of the [Mukilteo Comprehensive Plan](#).

Development that will generate more than ten (10) p.m. peak hour trips as determined by the Director, or their designee, shall be required to meet concurrency requirements. In conducting the concurrency test to determine if a project will generate more than ten (10) p.m. peak hour trips, the p.m. peak hour trip standard trip generation rates reported by the Institute of Transportation Engineers (ITE) Trip Generation Manual shall be used.

If a project is required to meet the concurrency requirements, the applicant must submit a transportation impact analysis before a permit application is determined to be complete. This study will be the responsibility of the applicant and must be prepared by a registered professional civil engineer with adequate experience in transportation engineering. It is preferred, but not required, that the engineer be a member of the Institute of Traffic Engineers (ITE). The analysis shall follow generally accepted traffic analysis and concurrency methodologies, use accepted data sources, comply with the concurrency requirements of state law, and establish the basis for any conclusions drawn. Refer to Appendix E for Transportation Impact Analysis guidelines.

In the event that the City uses an outside consultant to conduct the concurrency test, the applicant shall be required to pay all consultant fees and costs incurred in connection with the testing.

If a project is required to provide mitigation as a means to meet concurrency, they shall follow the measures in [MMC 17.15.070](#).

Exemption of a development from the concurrency requirements does not exempt the development from any other requirement, including, but not limited to, the payment of transportation impact fees.

#### **4.4.2 Transportation Impact Fees**

The City levies transportation impact fees consistent with City standards as development occurs. Impact fees are authorized under the [MMC 3.107](#), and the Municipal Fee Schedule as passed by the City Council. No building permit shall be issued for any construction or expansion of a building, structure, or use; any changes in the use of a building or structure; or any changes in the use of land that create additional demand and need for public transportation facilities until the transportation impact fees have been paid as provided in [MMC 3.107](#).

### **4.5 Street Classification**

Federal and State guidelines require that streets be classified based on function. The City streets are classified according to Table 5 – Street Classification Characteristics (typical). Other classifications include alley and private streets. To determine what street classification(s) your project abuts, contact the City at 425.263.8000.

#### **4.5.1 Arterial Streets**

Arterials provide a high degree of vehicular mobility through effective street design and by limiting property access to the right-of-way. Most vehicle trips on arterials are through-traffic. Arterials are divided into two classes, Principal and Minor Arterials. Higher classification arterials (Principal being the highest), have larger traffic volumes, more through-traffic, and longer trips, and ideally have fewer access points.

##### **4.5.1.1 Principal Arterials**

Principal Arterials serve the major centers of activity within the City and serves as the principal connection points with the road network outside of the City. Principal Arterials is generally intended for predominantly “through” traffic. These roads carry the highest volumes of traffic within the City. (*Examples are 5<sup>th</sup> Street (Mukilteo Boulevard), SR 525 (Mukilteo Speedway), SR 526 (84<sup>th</sup> Street, east of SR 525).*)

##### **4.5.1.2 Minor Arterials**

Minor Arterials provide intra-community travel for areas bounded by the Principal Arterial system. These types of roadways serve trips of moderate length and provide direct access to abutting properties. Minor Arterials are the connecting roads between Urban Collectors and

Principal Arterials, but generally do not go into the neighborhoods themselves. (*Examples: Beverly Park Road*)

#### **4.5.2 Urban Collector**

Urban Collectors provide for land access and circulation within the community, including connecting neighborhoods with smaller community centers. Collectors also provide access from the local roads (street) network to Minor and Principal Arterials. Property access is generally a higher priority than through traffic movements on this type of roadway. (*Examples: 76<sup>th</sup> Street SW, 44<sup>th</sup> Avenue W, 2<sup>nd</sup> Street, Harbour Pointe Boulevard*)

#### **4.5.3 Local Access Streets**

Local Access streets provide access to abutting properties, serving individual neighborhoods, and provide connection of the properties to the Arterial and Collector streets. Through traffic movements are discouraged on this type of road and design controls are usually in place to facilitate this.

#### **4.5.4 Alley**

An alley is a public right-of-way that serves as a service roadway providing a primary or secondary means of automobile, service vehicle, or emergency vehicle access to abutting property. An alley is not intended for primary traffic or pedestrian circulation. The City maintains the alleys which are paved. Gravel or unimproved alleys are not maintained by the City.

#### **4.5.5 Private Road**

A private road is a privately owned and maintained road providing vehicular access within a property or properties. The City may approve a private road if it meets [MMC 17.54.020](#). The City will only accept dedication of private roads if it meets the requirements of [MMC 12.26](#).

**Table 5 – Street Classification Characteristics (Typical)**

	Arterial Streets			Non-Arterial Streets	
	Principal	Minor	Urban Collector	Local Access	Private
<b>Function</b>	<ul style="list-style-type: none"> <li>- Connect cities and urban centers with minimum delay</li> <li>- Channel traffic to Interstate system</li> <li>- Accommodate long and through trips</li> </ul>	<ul style="list-style-type: none"> <li>- Connect activity centers within the city</li> <li>- Connect traffic to Principal Arterials and Interstate</li> <li>- Accommodate some long trips</li> </ul>	<ul style="list-style-type: none"> <li>- Access to community services and businesses</li> <li>- Connect non-arterial to Minor and Principal Arterial</li> <li>- Accommodate medium-length trips</li> </ul>	<ul style="list-style-type: none"> <li>- Connect Local Secondary to Arterials</li> <li>- Provide local access</li> <li>- Accommodate short trips to neighborhood destinations</li> </ul>	<ul style="list-style-type: none"> <li>- Provide local access</li> </ul>
<b>Speed Limit (mph)</b>	35 or more	30 or more	25 or more	25	25
<b>Daily Volumes (vpd)</b>	>15,000	7,000-20,000	2,000-8,000	<3,000	<3,000
<b>Total Lanes</b>	Four or more	Two or more	Two or more	Two	Two
<b>Striping</b>	Travel lanes delineated	Travel lanes delineated	Travel lanes delineated	Centerline striping where required	No centerline striping
<b>Buses/Transit Stops</b>	Allowed	Allowed	Allowed	Allowed for short segments	Not allowed
<b>Bicycle Facilities</b>	5' Lanes, shared lanes, or signage	5' Lanes, shared lanes, or signage	5' Lanes, shared lanes, or signage	Shared lanes/signs	No specific bicycle facilities
<b>Pedestrian Facilities</b>	<ul style="list-style-type: none"> <li>- Sidewalks both sides</li> <li>- Landscape strips</li> </ul>	<ul style="list-style-type: none"> <li>- Sidewalks both sides</li> <li>- Landscape strips</li> </ul>	<ul style="list-style-type: none"> <li>- Sidewalks both sides</li> <li>- Landscape strips</li> </ul>	<ul style="list-style-type: none"> <li>- Pedestrian access through use of sidewalks, trails, or other</li> </ul>	<ul style="list-style-type: none"> <li>- Pedestrian access through use of sidewalks, trails, or other</li> </ul>

## 4.6 Access Management and Design

Access management is a means to protect the safety, operation, and functional purpose of the street system while considering access needs. Access management aims to provide access to land development while simultaneously preserving traffic flow. Appropriate access management strikes a balance between the operation and function of a street with the demand for access to right-of-way. Safety, speed, and capacity are the main reasons to institute access management. Access management recognizes the interests of both land owners and roadway users in providing a transportation system that better meets the needs of all interests.

The City's street system provides mobility to the traveling public and direct access to properties. At times, these two purposes can conflict. For example, multiple accesses on a road segment may compromise safety, speed, and capacity.

The existing and future function of each street is critical in determining the number, location, and design of access points for access control. Access management extends beyond simply specifying the number and separation of driveways and access points. Access management includes roadway design elements, such as auxiliary lanes, medians, stopping sight distances, channelization, and land development issues such as sign standards, internal site layout, driveway/parking lot layout, and alternative travel modes.

Pedestrians and bicycles are especially vulnerable to turning vehicles at access drives. The consolidation of access points benefits pedestrians and bicyclists by reducing the number of conflict points along the roadway. Access designs for pedestrian and bicycle facilities shall conform to 4.6.5 Access Design.

### 4.6.1 General

The Director approves the design, number, and location of access points to the City right-of-way. When changes in land use result in changes to the type and operation of access, the access location and design will be reviewed with the development plans and shall be constructed or modified to meet current standards.

1. **Backing into the right-of-way.** Parking lots or loading areas that require backing maneuvers in a public street shall not be approved. Driveways that require backing maneuvers into an arterial street shall not be approved.
2. **Maintenance.** Maintenance of driveway approaches shall be the responsibility of the owner whose property they serve.
3. **Restriction of Turning Movements.** Turning movements may be limited where necessary for safe and efficient movement of traffic, both on-site and off-site. Traffic control devices controlling traffic from private property shall be installed and maintained by the property owner on private property at no cost to the City.
4. **Abandoned Access.** All abandoned driveway approaches on the same frontage shall be removed; and the curbing and sidewalk, or shoulder, and ditch section shall be restored to meet current standards.



5. **Temporary Access.** The City may grant temporary access to accommodate phased development of a site. Temporary access shall be shown on the civil plans and approved by the Public Works Director, or their designee, prior to permit issuance. The temporary access shall be removed after permanent approved access is constructed.

#### **4.6.2 Required Access**

All new development shall be served by adequate vehicular access as follows:

1. All development proposals shall have direct access from at least one of its boundaries, to an existing improved dedicated street, or shall be required to improve their access to meet these standards including, but not limited to:
  - a. Dedication of right-of-way;
  - b. Installation of street improvements such as paving, curb, gutter and sidewalk; and
  - c. Upgrade existing street conditions to meet the minimum standards specified herein; and
2. The circulation system of development shall intersect with existing and anticipated streets abutting the site at safe and convenient locations; and
3. The circulation system of development shall provide direct connections to adjacent developments (inter-parcel) where appropriate; and
4. Every project that proposes one or more buildings on a lot, or for which a traffic generating use is proposed, shall establish direct access from the street right-of-way, fire lane, or a parking space to any part of the property as needed to provide public services such as fire protection, emergency medical service, mail delivery or trash collection.

#### **4.6.3 State Highways**

Access points to the state highway system are regulated through the Revised Code of Washington (RCW). There are two access classifications for state highways – Limited Access and Managed Access.

1. Limited Access is a highly restricted access to designated highways including all interstate highways and other state highways where access rights have been acquired. WSDOT allows private direct access only by deed. State Route 525 on Mukilteo Speedway from milepost 5.18 to milepost 5.83 is the only limited access highway in the City of Mukilteo. The Access Control Class is M.
2. Managed Access Highways are those state highways where access rights have not been acquired by the state but access connections are regulated through the access management program. The following are Managed Access highways within City limits and all are Access Control Class Three:
  - a. SR 525 on Mukilteo Speedway from milepost 3.55 (Corporate Limits) northwesterly to milepost 5.18.

- b. SR 525 on Mukilteo Speedway from milepost 5.83 to milepost 8.47 (Corporate Limits at the ferry landing on Front Street).
- c. SR 525 Spur (SPPAINE) on Paine Field Boulevard from milepost 5.60 at the junction with SR 525, northerly to milepost 5.62 (Corporate Limits). Note: Adjusted milepost by 0.01 mile to coincide with SR 525 mainline milepost at junction with Spur.
- d. SR 526 on 84<sup>th</sup> Street SW from milepost 0.00 easterly and northeasterly to milepost 0.65 (Corporate Limits) in the vicinity of 40<sup>th</sup> Avenue West.

Any development that requires the construction or improvement of a driveway or construction of any street classification that intersects a state or federal highway shall be designed in accordance with the Standards, [WAC 468-52](#), and the [WSDOT Highway Access Management Guidebook](#).

#### **4.6.4 Access Provision**

- 1. One access point per parcel of property shall be permitted; and
- 2. If a property has frontage on more than one street, access will be restricted to the street having the lowest classification. If property cannot be served by any access point meeting these standards, the designation of access point(s) shall be based on traffic safety, operation needs, and conformance to these Standards. If necessary, access shall be limited to right turns only to provide for the safe and efficient movement of traffic; and
- 3. Each lot shall have access to a public-right-of-way by direct access to a right-of-way, by a recorded easement, or by a recorded access tract; and
- 4. Direct access, including single-family, onto an arterial is allowed only when alternative access is not available, or when specifically allowed in the [MMC](#); and
- 5. It shall meet the sight distance requirements in [MMC](#) 17.20 and [MMC](#) 17B.20; and
- 6. The curb cut, driveway, or street opening shall not be any closer than five (5) feet from a property corner for non-corner lots, except for joint use driveways. For corner lot properties, curb cut, driveway, or street openings shall not be any closer than thirty (30) feet of the property corner radius.
- 7. The Director may approve more than one access for a single family residential project that includes a duplex or an ADU application. Factors to be considered include, but are not limited to:
  - a. The location and width of adjoining driveway cuts;
  - b. The amount of parking required for the project;
  - c. The width of the subject lot;
  - d. The accesses are separated by 100 feet;
  - e. The classification of the adjoining street.

8. The Director may approve more than one access for a multi-family, commercial, or industrial project if the following is met:
  - a. A Transportation Impact Study shows that the additional access point(s) is/are required to adequately handle the driveway volumes, and that the additional access point(s) will not be detrimental to safety, capacity, and traffic flow on adjacent streets;
  - b. The accesses are separated by 100 feet;
  - c. The project is not located on a Principal Arterial.
9. The Director may approve one-way ingress/egress accesses, or circular driveway accesses from one property/tax parcel for residential, multi-family, commercial, or industrial under the following conditions:
  - a. The total width of both drives shall not exceed 30 feet;
  - b. Near edges of the two accesses are separated by 100 feet;
  - c. Each access is offset from the property lines by five (5) feet minimum;
  - d. The accesses have adequate site distance;
  - e. The classification of the adjoining street is Local Access;
  - f. The access is approved by the Fire Marshal.

#### **4.6.5 Access Design**

All accesses shall be located, designed, and constructed to minimize traffic congestions and maximize public safety on the street system.

##### **4.6.5.1 General**

1. **Design.** The designers of proposed developments must consider the access and driveway profile to ensure that required grade transitions can be complied with while considering building setback, terrain, and grades.
2. **Emergency Vehicles.** All accesses shall be located and designed to readily accommodate emergency vehicles per the Fire Marshal's determination based on those that would ordinarily respond at the particular establishment. For driveways designated as fire lanes and/or fire apparatus access roads, the design standards delineated in the International Fire Code and [MMC 17.54](#) shall also apply.
3. **Traffic Control Devices.** All on-site traffic control devices, including signs and pavement markings, shall meet the [MUTCD](#) standards.

##### **4.6.5.2 Access Width**

The access width is measured at the right-of-way/property line. Allowed access widths shall be the minimum width shown in Table 6 – Access Widths, unless a transportation impact study or

a design vehicle turning radius warrants a wider access and it is approved by the Public Works Director, or their designee.

**Table 6 – Access Widths**

	Local Access/Collector Streets		Arterial Streets	
Access Types	Width (ft)		Width (ft)	
	Min.	Max.	Min.	Max.
<b>Residential</b>	12	30	12	<b>30</b>
<b>Joint-Use Driveways</b>	16	30	16	<b>30</b>
<b>Multi-family</b>	20	30	20	<b>30</b>
<b>Commercial</b>	24	30	30	<b>30</b>
<b>Circular Drive</b>	12 (Local Access Only)	15 (Local Access Only)	NA	<b>NA</b>
<b>Private Road</b>	See Section 4.7.9 Private Roads and Table 10			

#### **4.6.5.3 Access Clearance**

The minimum distance from the intersection right-of-way line to the near edge of the access point for a single-family residence on a non-arterial street is 30 feet.

The minimum distance from the intersection right-of-way line to the near edge of the access point for commercial, industrial, and multi-family access onto a non-arterial street is 70 feet.

#### **4.6.5.4 Access Approach**

A paved access approach shall be provided between the property line and the edge of pavement in the right-of-way.

No portion of the access approach shall be allowed within five (5) feet of side property line, measured perpendicular to the side property line that is projected into the right-of-way, except:

1. On a cul-de-sac bulb as necessary for proposed residential access;
2. A shared driveway.

An access approach that crosses an open ditch section will need a culvert that is adequately sized to carry anticipated stormwater flows.

#### **4.6.5.5 Driveway**

A driveway, including the landing, extends from the access at the property line/right-of-way line onto the property.

Driveways shall be graded to match into possible future road section without encroachment into graded shoulder or sidewalk. The maximum grade for driveways to meet the public right-of-way is five percent (5%). This grade shall not be exceeded for a distance of twenty (20) feet from edge of pavement. The maximum grade for residential driveways beyond that point is fifteen percent (15%) without approval by the Director. The maximum grade break on the driveway at the future edge of pavement for the City street shall not exceed five percent (5%). Additional required grade breaks beyond this point shall be designed to prevent dragging of emergency service vehicle undercarriage and/or bumper.

All driveways shall intersect perpendicularly to the street at the right-of-way access. Alternate alignment may be allowed to accommodate specific site conditions.

1. **Residential.** Private driveways and joint-use driveways shall conform to the following:
  - a. Private Driveways
    - i. Serve only one single-family residential lot;
    - ii. Have a pavement surface that:
      1. Is constructed of HMA, cement concrete or approved equal,
      2. Is at least twelve (12) feet in width, although the Public Works Director or the Fire Marshal may require additional width,
      3. Extends from the edge of the roadway serving the driveway to the front face of the carport, garage or parking area for the lot,
      4. Has a maximum width that does not exceed the width in Table 6 – Access Widths;
    - iii. Shall be maintained by the property owner and will not be maintained by the City;
    - iv. That exceed one hundred fifty (150) feet in length from their connection to a public or private street:
      1. Shall require Fire Marshal and Public Works Director review and approval; and
      2. May be designated as a fire lane by the fire marshal and may be required to be constructed a minimum of twenty feet in width as determined by the Fire Marshal;

- v. Shall have a minimum length of twenty feet from the face of the garage to the property line.
- b. Joint-Use Driveways shall:
  - i. Serve no more than two single-family residential lots;
  - 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;
  - iv. Have a pavement surface:
    - 1. Constructed of HMA, cement concrete or approved equal,
    - 2. At least sixteen (16) feet in width, although the Public Works Director of the Fire Marshal may require additional width,
    - 3. Centered within a private easement or tract for ingress and egress,
    - 4. That extends from the edge of the roadway serving the driveway to the front face of the carport, garage or parking areas for the lots,
    - 5. With a maximum width that does not exceed the width in Table 6 – Access Widths.
  - v. Be maintained by the appropriate property owners and will not be maintained by the City;
  - vi. Require Fire Marshal and Director review and approval if it exceeds one hundred fifty (150) feet in length from their connection to a public or private street. It may be designated as a fire lane by the fire marshal and may be required to be constructed a minimum of twenty feet in width as determined by the Fire Marshal; and
  - vii. Have a minimum length of twenty feet from the face of the garage to the property line.

#### **4.6.5.6 *Parking Lots***

The required throat length at an access is determined during the permit review process and is typically based on the Transportation Impact Study.

1. **Outbound.** The throat shall be of sufficient length to provide adequate storage of outbound vehicles without interference with on-site circulation. Outbound vehicle storage areas shall be provided to eliminate backup and delay of vehicles within the development.

2. **Inbound.** The throat shall be of sufficient length to prevent vehicles from spilling onto the street system, and from obstructing the adjacent street, sidewalk, or circulation within the facility.

The requirements for parking spaces can be found in [MMC 17.56](#) and [MMC 17B.56](#).

## **4.7 Street & Intersection Design**

Streets shall be classified, designed and constructed to comply with the Mukilteo Comprehensive Plan and the City's Transportation Plan.

The intent of this section is to encourage the uniform development of an integrated and accessible public street system that will support present and future multi-modal transportation.

Through the implementation of these Standards, streets are built as transportation facilities as well as public spaces, contributing positively to the character of an area. These Standards help create an efficient multi-modal transportation system with minimal environmental impact to the community.

These standards balance the safety and mobility of motor vehicles, bicyclists, pedestrians and transit riders. The features in the standards are intended to:

1. Maintain safe motor vehicle speeds through narrow street widths and street edge features for friction;
2. Provide safe pedestrian crossings through narrow lane widths, crossing islands, and curb bulb-outs;
3. Provide inviting space for pedestrians on wide sidewalks with buffers from motor vehicle traffic;
4. Provide adequate width, signs and markings for safe on-street bicycle travel; and
5. Create inviting public space through landscaping and other street edge treatments.

### **4.7.1 Development**

Requirements for development and the level of improvement can be found in Section 4.3 General Requirements and Section 4.6 Access Management and Design of the Standards. In addition, the following will apply to all development projects.

When a development is served by an existing street or streets which either has not been improved or has a substandard roadway in accordance with the Standards, the developer shall be required to comply with the following provisions as a condition of approval of the Permit:

1. The full roadway abutting the subject property excluding the curb, gutter and sidewalk on the opposite side, shall be constructed, reconstructed or improved as specified by the standards and requirements of Section 4.3.7 and 4.7.9.

2. When the Mukilteo Comprehensive Plan and Mukilteo Transportation Plan requires a collector or arterial street in a single family area, the developer may be required to construct such street.
3. The owner of the subject property shall agree to accomplish such construction, reconstruction or improvement as a condition of project approval.

When a development borders on or contains an existing or proposed principal arterial, minor arterial, limited access highway, or existing railroad right-of-way, the development shall be designed as follows:

1. The rear portion of the lots shall abut the arterial, highway, or rail line;
2. Shall be separated by a buffer strip; and
3. Provide access onto a parallel local street connecting to another local access street; or a local street shall be constructed parallel to the arterial, highway, or rail line with lots fronting on the opposite side and separated by a buffer.

Proposed rights-of-way shall be extended to the boundary lines of the proposed subdivision in order to provide for future development of adjacent tracts where identified in the Mukilteo Comprehensive Plan unless prevented by natural conditions such as topography, or it is determined not to be necessary or desirable by the Public Works Director, or their designee.

The use of curvilinear streets is encouraged in the design of street layout for residential subdivisions, versus grid patterned streets, to discourage through traffic and reduce conformity of lot appearance.

The street pattern for subdivisions, short subdivisions, and development proposals should be designed to expedite traffic movement, reduce conflicts between various types all types of traffic movements, and coordinate the location of proposed buildings, loading and parking facilities.

All lots within a development must be designed to take direct access off of a public or private street. The creation of land locked parcels shall not be allowed.

#### **4.7.2 Reconstruction**

Requirements for reconstruction depend on the type of development and the existing level of improvement; see Section 4.3 General Requirements and Section 4.6 Access Management and Design of the Standards.

Reconstructed roadways shall be brought up to current standards. Transitions or tapers necessary to connect with existing roadway of a different width shall meet [AASHTO](#) and [MUTCD](#) Standards.

#### **4.7.3 Widths**

Widths required for specific streets are provided in Appendix E – Street Matrix.



#### 4.7.4 Vertical Alignment

A well-designed vertical street alignment should attempt to reduce undulations and avoid mid-block sag vertical curves. Although the vertical alignment is a product, to some extent, of existing condition, the City requires that new and rehabilitated streets be designed so as to minimize vertical deflections.

Curve length and stopping distance shall be designed to ensure proper drainage, clear sight distance, and safety for vehicles and pedestrians.

The minimum grade on any street shall not be less than 0.3%. The maximum gradient on any street is shown in Table 7 – Maximum Profile Grade.

**Table 7 – Maximum Profile Grade**

Maximum Profile Grade				
Private	Local	Urban Collector	Arterial – Minor	Arterial – Principal
20% <sup>1</sup>	15%	14%	10%	9%

<sup>1</sup> Structures gaining access via fire apparatus access roads that exceed 15% in grade will be required to install an approved automatic sprinkler system that covers the entire structure. (2009 IFC, 503.2.7)

Note: The standards contained above may be modified to include stricter standards, as determined by the Public Works Director based on traffic loads, soil conditions, and stormwater requirements.

Maximum profile grade may be exceeded for 300 feet or less, upon showing that no practical alternative exists. Deviations exceeding fifteen (15) percent will require approval by the Fire Marshal.

#### 4.7.5 Vertical Curve Criteria

Grade transitions shall be constructed as smooth vertical curves except in intersections where the difference in grade is one (1) percent or less, and upon approval of the Public Works Director.

1. The minimum vertical curve for roadways is 75 feet.
2. The point of vertical curvature shall not encroach into a cross street any further than the center of pavement of the cross street.
3. Cross Slope: The typical cross slope is two (2) percent crown to provide for adequate drainage to the pavement edge. The maximum cross slope on the tangent sections shall not exceed four (4) percent. The minimum cross slope shall be one (1) percent.
4. Stopping Sight Distance (SSD): SSD applies as shown on Table 8 – Vertical Curve – Minimum Stopping Sight Distance.

- a. SSD is based on an eye height of 3.5 feet and the height of an object at 0.5 feet.
- b. For downgrades exceeding three (3) percent, the SSD shall be increased by the values shown in Table 8.
- c. The Public Works Director may approve sag vertical curves on local access streets with stopping sight distance less than that in Table 8 – Vertical Curve – Minimum Stopping Sight Distance, if maximum extent feasible design exists and if acceptable road lighting is provided throughout the curve.

**Table 8 – Vertical Curve – Minimum Stopping Sight Distance**

Design Speed (mph)	Flat (feet)		Downgrade (feet)	
	0%	3%	6%	9%
25	165'	165'	175'	185'
30	200'	210'	220'	230'
35	250'	265'	280'	305'
40	325'	345'	365'	400'

#### **4.7.6 Horizontal Curve Criteria**

Super-elevation is not required in the design of horizontal curves of local residential streets. However, super-elevation may be used on local streets to meet terrain and right-of-way conditions. When super-elevation is necessary, refer to [AASHTO](#) Low Speed Urban Streets Design Manual.

For Horizontal Curve Criteria see Table 9 – Horizontal Curve Design.

**Table 9 – Horizontal Curve Design**

Min. Design Speed (mph)	20 <sup>1</sup> Grades >10%	25 <sup>1</sup>	30 <sup>1</sup>	35	40
Center line Radius <sup>2</sup> Minimum (ft)	100	150	300	470	See note <sup>3</sup>
Horizontal Sight Distance Minimum (ft)	150	200	200	250	325
Min. Reverse Curve Tangent – Minimum (ft)	0	0	0	200	200
Approach Tangent at Intersections <sup>3, 4</sup> Minimum (ft)	50	75	100	200	300
Tangent between Curves Minimum (ft)		50	50		
Minimum Run-Off Length (ft)		80	90	100	115
Super-elevation		Not Required AASHTO Low Speed Urban Streets Design manual.	Not Required AASHTO Low Speed Urban Streets Design manual.	8% Maximum Calculate run-off lengths: <u>AASHTO Low Speed Urban Streets Design Manual</u>	
6% Super-elevation Horizontal Curvature Radius (ft)		185	275	380	510
8% Super-elevation, Horizontal Curvature for Radius (ft)		170	250	350	465

Source: “Low Speed Urban Streets”, AASHTO

1 Use these criteria without superelevation

2 Radii based on crown section with 2% slope on each side of crown

3 Where superelevation is used, calculate runoff lengths according the WSDOT Design Manual.

4 Where a curved road approaches an intersection, these tangent sections must be provided on the approach to the intersection to provide for adequate sight distance for traffic control devices at the intersection. The distance shall be measured from the flow line of the through street. Where superelevation is used, calculate runoff lengths according the WSDOT Design Manual intersection. The distance shall be measured from the flow line of the through street. Where superelevation is used, calculate runoff lengths according the WSDOT Design Manual.

#### **4.7.7 Street End**

Turnaround facilities shall be provided at street ends where the street length from the nearest intersection is more than one hundred fifty (150) feet measured from the edge of the traveled way to the end of dead-end street pavement, and shall be constructed as follows:

1. Minimum right-of-way diameter across bulb section for a permanent cul-de-sac shall be 116 feet.
2. Minimum diameter across the bulb section for a temporary cul-de-sac shall be 102 feet. A temporary easement pending forward extension of the street shall be provided for the bulb area that lies outside of the straight-street-right-of-way.
3. Right-of-way may be reduced, provided that utilities and necessary drainage are accommodated on permanent easements within the development.
4. Minimum diameter of surfacing across bulb:
  - a. Permanent cul-de-sac
    - i. 94 feet of paving (pavement edge to pavement edge);
    - ii. 18 inch curb and gutter; and
    - iii. 5 feet sidewalk.
  - b. Temporary cul-de-sac
    - i. 94 feet of paving (pavement edge to pavement edge);
    - ii. 3 feet gravel shoulder; and
    - iii. Temporary easement.
5. Cul-de-sac Island: Optional feature for any cul-de-sac. If provided, island shall have full-depth curb. Minimum diameter shall be 20 feet and there shall be at least 30 feet of paved traveled way in a curb type section around the circumference. Island shall be offset two feet from edge of traveled way. Island shall be landscaped. The adjoining lot owners shall maintain island through a maintenance agreement that shall be recorded with Snohomish County and a copy provided to the City prior to permit issuance.
6. Sidewalks shall be constructed on both sides of the stem and on the bulb.
7. The maximum cross slope in a bulb shall not exceed six (6) percent.

The Public Works Director, or their designee, or the Fire Marshal, may require an emergency vehicle access to connect a cul-de-sac at its terminus with other streets.

A dead-end local street shall not be longer than 600 feet, measured from the edge of the traveled way of the street to the center of cul-de-sac. The Public Works Director, or their designee, will consider deviations to this based on evidence shown through pertinent traffic planning factors such as topography, sensitive areas and existing development. The maximum length may be

extended to 1,000 feet if there is provision for an emergency vehicle turnaround near mid-length and Fire Marshal approval has been obtained in writing.

The Public Works Director, or their designee, may require an off-street walk or an emergency vehicle access to connect a cul-de-sac at its terminus with other streets, parks, schools, bus stops, or other pedestrian traffic generators, if the need exists. Off-street sidewalks shall be contained in the right-of-way or a sidewalk easement.

If a temporary cul-de-sac exists, removal of the temporary cul-de-sac, regrading/restoration and extension of the sidewalk shall be the responsibility of the developer who extends the road.

A hammerhead may be used to fulfill the requirement to provide a turnaround facility where the street serves (or will serve) four or fewer single-family residential units.

#### 4.7.8 Utility Locations

Utility structures shall be located in the landscaping strip, at the back of the sidewalk without encroaching onto private property, in the gutter line, or within the roadway. New utility structures are not allowed in sidewalks, driveways, driveway approaches, or curb ramps. Underground systems shall be located at least five (5) feet away from road centerline and where they will not otherwise disturb existing survey monuments.

#### 4.7.9 Private Streets

While communities are usually best served by public streets, owned and maintained by the City, private streets may be appropriate for some local access streets. Usually these are minor access streets, either residential or commercial.

Private streets may be permitted only when the requirements in these Standards, the following tables, and [MMC 17.54](#) are met.

**Table 10 – Private Street Standards**

	Tract or Easement Width	Travel Lanes	Parking Lanes	Planter Strip	Sidewalk	Curb & Gutter	Bike Lane	Gravel Shoulder	Total Width of Improvements
3-6 Lots	35 feet	2 – 10 foot travel lanes	8 feet on one side <sup>1</sup>	None	None	None	None	3 feet both sides of street	34 feet
7+ Lots	40 feet	2 – 10 foot travel lanes	8 feet on one side <sup>1</sup>	None	5 foot walkway on one side	None	None	3 feet both sides of street	39 feet

**Table 11 – Private Street Minimum Design Standards**

	Asphalt Paving and Base Course	Curb and Gutter	Storm Drainage	Side Slope	Sidewalk/ Curb Ramp	Street Curves	Minimum Sight Distance	Street Grades
Private Street	Minimum 2" compacted HMA  2" Asphalt Treated Base Course (ATB)  6" Crushed Surface Base Course	None	City of Mukilteo Development Standards Chapter 3, MMC 13.12, and Ecology Manual	Max.: 1.5V:1H	WSDOT Standard Plan/ ADA Standards / COM Development Standards	Current AASHTO Standards for Geometric Design of Highways and Streets	Current AASHTO Standards for Geometric Design of Highways and Streets	20% max., 0.3% min <sup>2</sup>

1 Minimum of 1 parking space per lot based on maximum build out of lots per property. If length of private road prohibits achieving the minimum number of parking spaces, documentation must be provided showing that they number achieved was the Maximum Extent Feasible (MEF).

2 Structures gaining access via fire apparatus access roads that exceed 15% in grade will be required to install an approved automatic sprinkler system that covers the entire structure. (2009 IFC, 503.2.7)

Note: The standards contained above may be modified to include stricter standards, as determined by the Public Works Director based on traffic loads, soil conditions, and stormwater requirements.

The City will not accept private streets for maintenance as public streets until all requirements in [MMC 12.26](#) are met.

#### **4.7.10 Alleys**

Alleys should provide through access between City streets. In cases where this is not feasible, adequate turnarounds shall be provided. All new alleys constructed with new development shall be private.

Alleys shall incorporate the design criteria used in designing local streets except for the following exceptions:

1. Alley shall have a minimum width of twenty (20) feet of asphalt pavement unless otherwise approved by the Fire Marshal.
2. Curb and gutter, sidewalk, lighting, and landscaping are not required along alleys.
3. Alleys may be paved with inverted crown at centerline to convey stormwater into systems located at low points in the invert.
4. Alleys shall connect to City streets via a commercial driveway apron.

The design requirements for alleys serving alley accessed lots shall be determined on a case-by-case basis depending upon the specific application. As a minimum these types of alleys shall meet the functional requirements of pedestrian, vehicular, and emergency access, with considerations for stormwater, landscaping and lighting.

#### **4.7.11 One-Way Streets**

Local access streets, including loops, may be designated one-way upon a finding by the Public Works Director, or their designee, that topography or other site features make two-way traffic impractical.

#### **4.7.12 Half Streets**

A half street could be comprised of any street classification. Half Streets require, at a minimum, the construction from one side of the street, including the curb and gutter, stormwater improvements, sidewalk, and landscape strip to the street centerline. Half streets are required will need to be constructed when a proposed new development or redevelopment of a property is located on a public street that is not currently built to City standards. Half street construction may also be required for property that abuts future streets proposed in the Mukilteo Comprehensive Plan.

When half street construction is required on an existing paved street, the design of the half street shall be consistent with the existing street conditions. This could require construction of more than half the street for safety and stormwater reasons.

When half street construction is required on unpaved streets or unimproved areas, a minimum of twenty-four (24) feet of pavement will be required. In these cases, the street should be designed to provide drainage for the constructed portion of the street. Provisions shall be made to allow for the extension of the stormwater system to the undeveloped portion of the street for future construction.

The construction of a half street may require the dedication of additional right-of-way. If a half street does not connect at both ends to other streets, construction of a cul-de-sac, or other approved turn-around, will be required.

All proposed utilities located within the portion of the street being build, shall be installed during construction. Half street construction may also require the upgrading of existing utilities if said upgrading was necessary for the proposed development. All new utilities installed in association with new development shall be placed underground.

The unfinished side of the half street shall be finished with temporary curbing, shoulders, ditches and/or side slopes so as to assure proper drainage, bank stability, and traffic safety.

When half streets connect to an intersection, the intersection shall be designed and constructed for the full build-out of the street. The intersection design and construction shall extend at a minimum fifty (50) feet from the travel way of the cross street.

#### **4.7.13 Curb and Gutter**

Cement concrete curb and gutter shall be constructed where required in Section 4.3.7 and 4.7.9. Where new cement concrete curb and gutter is to be constructed to connect to existing curbed roadway, care shall be taken to assure that no abrupt offsets in line or grade shall be constructed which will be unsightly or impede flow in the gutter line. The curb and gutter shall be designed and constructed in conformance with the following:

1. [WSDOT Standard Plan](#), Section F Curbs, Sidewalks and Driveways; and
2. [ADA Standards for Accessible Design](#); and
3. [2011 Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way \(2011 PROWAG\)](#); and
4. Twenty-four inch wide curb and gutter shall be used only for uniformity or replacement; and
5. Form and subgrade inspection by the City is required before curb and gutter is poured; and
6. Monolithic pour of curb and sidewalk will not be allowed; and
7. All curb and gutter shall be constructed with Class 4000 concrete furnished and placed in accordance with [WSDOT Standard Specifications](#), Sections 6-02, 8-04, and 8-14. Cold weather precautions as set forth in [WSDOT Standard Specifications](#) Sections 5-05.3(14) and 6-02.3(6) shall apply; and
8. Subgrade compaction for curbs, gutters, and sidewalks shall meet a minimum 95 percent of maximum density ASTM D1557.
9. Extruded curb is not allowed in the public right-of-way, unless it is temporary and approved by the Public Works Director.
  - a. When used, extruded cement concrete curb shall be anchored to existing pavement by either steel tie bars or adhesive in conformance with [WSDOT Standard Specification](#) Section 8-04.
  - b. When used, extruded asphalt curb shall be anchored by means of tack coat of asphalt in accordance with [WSDOT Standard Specification](#) 8-04.
10. A concrete access approach must have a construction joint at the right-of-way line.

#### **4.7.14 Intersections**

Intersections include driveway access as well as an approach to a street. Intersection design shall conform to the guidelines set forth in the following:

1. [A Policy on Geometric Design of Highways and Streets, AASHTO](#)
2. [Guide for the Development Bicycle Facilities, AASHTO](#)
3. [ADA Standards for Accessible Design](#)



4. [2011 Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way \(2011 PROWAG\)](#)
5. [Manual on Uniform Traffic Control Devices, Federal Highway Administration](#)

For intersections with state highways, refer to [Washington State Department of Transportation](#).

#### **4.7.14.1 Alignment**

Streets shall intersect as nearly as possible at right angles. The intersection of two streets shall be at an angle of seventy-five (75) degrees or less. The extension of the centerline of each leg of an intersection shall not be offset by more than two feet into the oncoming lane.

#### **4.7.14.2 Spacing**

The minimum distance between adjacent parallel private or local streets shall be 150 feet, measured from nearest curb edge to nearest curb edge. For all other intersection, the spacing shall be determined during preliminary design.

#### **4.7.14.3 Design Vehicles**

Intersections shall be designed to accommodate the design vehicle appropriate for the highest classified street forming the intersection.

The intersection design shall accommodate the use of the roadway as a designated truck route, bus route, or school bus route.

The minimum design vehicle is the SU-30, although use of larger design vehicles may be required depending on roadway classification, transit routes, and adjacent land use.

All elements of the intersection shall be designed so the design vehicle will not encroach onto curbs, sidewalks, traffic control devices, medians, or the travel lanes of opposing travel flow.

#### **4.7.14.4 Curb Radii**

Curb radii design must balance vehicle turning movements with pedestrian safety. Typically, it is appropriate to use the smallest turn radii possible that still accommodates the design vehicle. For design, round curb radii to the nearest five foot increment.

Typical curb radii based on street classification are shown in Table 12 – Typical Curb Radii Design Values. However, these values may be impacted by site conditions, including the width of receiving lanes, on-street parking, and angle of intersecting roadways. A proposal for a curb radius design must be accompanied by supporting documentation for review and approval by the Public Works Director.

**Table 12 – Typical Curb Radii Design Values**

Street Classification (for highest street classification at intersection)	Radius
Arterial to Arterial	28 feet
Arterial to Local Street	20 feet
Local Street to Local Street	20 feet
Transit/Truck Route	30 feet
Where vehicular turn is prohibited	10 feet
Radii for curb setbacks and bulb-outs	15/15 feet

#### **4.7.14.5 Drainage**

An intersection shall be laid out and graded so that surface water drains and the intersection is safe and accessible for pedestrians and bicyclists.

Drainage structures shall not be placed in an ADA ramp or landing area. They should be located outside the corner radii, and should be placed at upstream side to reduce runoff or ponds in the curb ramp area.

#### **4.7.14.6 Intersection Grades**

Intersections shall be designed on grades as flat as practical.

At an unsignalized intersection, the maximum allowable grade in the intersection is four (4) percent extending a minimum of fifty (50) feet in each direction, measured from the outside edge of the traveled way of the intersecting street.

At signalized intersections, the maximum grade is two percent within the intersection and extends two hundred (200) feet in each direction. Grades above four percent will be allowed only in areas with steep topography or other unusual circumstances that prevent a flatter grade.

On sloping approaches at an intersection, landings shall be provided with grade not to exceed one foot difference in elevation for a distance of thirty (30) feet approaching an arterial or twenty (20) feet approaching a local street, measured from future right-of-way line (extended) of intersecting street.

The point of vertical curvature shall not encroach into a cross street any further than the center of pavement of the cross street.

#### **4.7.14.7 Pedestrian Treatments**

In order to provide pedestrian safety, accommodations for pedestrians shall be designed into all intersections where pedestrians are expected to be present. Pedestrian accommodations include

sidewalks, crosswalks, pedestrian refuge islands, and accommodations for pedestrians with disabilities.

1. Vaults, covers, castings, or drainage grates shall not be placed within the crosswalk, or within crosswalk curb ramps or landing areas.
2. Catch basin and j-box solid covers shall have non-slip covers when placed in sidewalks, pathways, crosswalks, or other pedestrian use areas. The non-slip surface shall be a non-grit, metallic allow surface with a hardness of up to 62 on the Rockwell “C” scale, SlipNot or equal. Diamond or checker plate surfaces are not considered equal. Manhole covers shall have non-slip low profile waffle tread when placed in sidewalks, pathways, crosswalks, or other pedestrian use areas.
3. Crosswalks (RCW 46.04.160) at the intersections are delineated as follows:
  - a. Projecting the curb and back of sidewalk lines across the street;
  - b. A line 10 feet behind the face of the curb or roadway pavement, when there is no sidewalk; or
  - c. Crosswalk markings.
4. Curb Ramps
  - a. Consistent with the American Disabilities Act, all projects, including alteration or new construction, shall meet ADA requirements and standards.
  - b. Curb ramps shall be fully within the crosswalk and shall align with the adjacent crosswalk. No utility boxes, stormwater inlets, signs, and other fixed objects shall be located within the ramp.
  - c. Ramp turning space shall be five feet by five feet and shall be clear of all vertical obstructions.
  - d. Utility box lids shall not be located anywhere within the curb ramp. In situations where it is not feasible to relocate the utility box, a junction box may be allowed if it is made skid resistant per WSDOT specification, with proper MEF documentation.
  - e. MEF documentation shall be provided for any curb ramps that are unable to meet ADA standards. The MEF documentation shall be provided with the permit application, as well as after the curb ramp has been built to account for any changes which occurred in the field.
5. When a project impacts an intersection or modification to a curb ramp occurs, the curb ramps shall be retrofitted to meet the current standards.
6. Where a ramp is constructed on one side of the street, a ramp shall also be provided on the opposite side of the street.

#### **4.7.14.8 Sight Distance Triangle**

Sight distance standards are important at intersections and driveways so that drivers, bicyclists, and pedestrians can see each other, in order to minimize potential conflicts when approaching and entering these locations.

All intersections and driveways shall have a minimum sight distance as required by [MMC 17.20.060](#) and [17B.20.050](#) Sight Distance Triangle.

Where any street intersection will involve earth banks or existing vegetation inside any lot corner that would create a traffic hazard by limiting visibility, the developer shall cut such ground and/or vegetation in connection with the grading of the public right-of-way to extent deemed necessary to provide an adequate sight distance.

#### **4.7.14.9 Pedestrian Sight Distance**

The minimum sight distance for pedestrian safety shall be determined as follows:

1. The driver of an existing vehicle shall be able to view a one (1) foot high object 15 feet from either edge of the exit lane at the driveway throat when the driver's eye is 10 feet behind the back of the pedestrian walkway.
2. The minimum sight distance shall be maintained at all driveways, buildings, and garage entrances where structures, wing walls, etc., are located adjacent to or in close proximity to a pedestrian walkway.

### **4.8 Non-motorized Facilities**

As new development or redevelopment occurs, sidewalks, bike lanes (or bike sharrows), paths or trails may be required with required frontage improvements. If a project is identified in the City's By The Way (BTW) Plan, the developer shall install the facilities across the full frontage of the property. If a project identified in the BTW Plan goes through the property, the property owner shall provide a pedestrian easement and construct the facilities within their property. The pedestrian easement shall be recorded with Snohomish County and a copy provided to the City prior to permit issuance. Separated facilities may be located in the right-of-way or within an easement.

#### **4.8.1 Sidewalks**

Sidewalks are required on all identified streets in the BTW Plan. Sidewalks may be required on private streets and street endings not identified in the BTW Plan.

Sidewalks shall follow [WSDOT Standard Plans](#), however the width may vary depending on the zone in which it is located. In addition:

1. Sidewalks shall be at least five feet wide.
2. Sidewalks shall maintain their full width around obstructions that cannot be relocated.

3. The required sidewalk width shall not include the curb or tree grates.
4. When a sidewalk must transition to frontage that does not have a sidewalk, the transition shall meet ADA requirements, to the MEF. The transition shall occur outside of the property frontage. Generally an asphalt transition is acceptable.
5. Curb ramps will be required at all intersection sections; see Section 4.7.14.7.
6. Parking Stalls. For stalls facing a right-of-way, a barrier, such as a wheel or bumper block, should be provided, located, and arranged so that no part of any parked vehicle extends into the right-of-way and that any vehicle overhang does not obstruct sidewalks, or other pedestrian walking areas.

#### **4.8.2 Paved Paths**

Paved paths are required on all identified areas in the BTW Plan. Paved paths may be required on private street and street endings not identified in the BTW Plan.

Paved paths can be designated for pedestrian, bicycle, or multi-use. The following shall apply to paved paths:

1. Widths for paved paths (not identified the BTW Plan):
  - a. Designated for pedestrian use shall be at least five (5) feet wide and have one (1) foot shoulders on each side.
  - b. Designated as two-way bike path shall be at least ten (10) feet wide. A two (2) foot wide graded shoulder is required on either side of a paved bicycle path.
  - c. A wider graded shoulder may be required when heavy pedestrian use is anticipated.
2. The maximum grade shall meet ADA requirements. Depending on site conditions, switchbacks may be required. The design engineer should specify treatment to be used on grades greater than five (5) percent.
3. Acceptable surface materials are hot mix asphalt and Portland cement concrete (concrete).

#### **4.8.3 Soft-Surface Paths**

Soft-surface paths are required on all identified areas in the BTW Plan. Soft-surface paths may be required on private street and street endings not identified in the BTW Plan.

Soft-surface paths are meant for pedestrian use, and shall:

1. Be a minimum of five (5) feet wide with at least one and one-half foot clearance to obstructions on both sides and at least ten (10) foot vertical clearance.
2. Be designed and located so as to avoid drainage and erosion problems.
3. Include switchbacks, if site conditions require.

4. Be constructed of two and one-half inches of crushed surfacing top course (CSTC) over cleared native material as approved by the City.

#### **4.8.4 Bicycle Facilities**

Bicycle facilities are required on all identified areas in the BTW Plan. Bicycle facilities may be required on private street and street endings not identified in the BTW Plan.

Bicycle facilities shall follow the AASHTO Guide for the Development of New Bicycle Facilities and shall be designed for uniformity in design, signage, and pavement marking for bicyclist and motorist safety.

### **4.9 Roadside Features**

Roadside features in the right-of-way shall be located so that vehicle and sight distance standards are met.

#### **4.9.1 Fixed Objects**

Locate fixed objects to meet vehicle and sight distance standards. The Public Works Director, or their designee, may allow modification to this requirement, if the modification will not compromise the safety of pedestrian or vehicular traffic.

**Table 13 – Standard Lateral Clearances**

<b>From</b>	<b>To</b>	<b>Standard</b>
Curb face	Closest part of any fixed object (excluding traffic control signs and parking meter posts)	2 feet
Edge of sidewalk	Stair riser	2 feet
Pole face, fire hydrant	Closest part of any fixed object (excluding traffic control signs and parking meter posts)	5 feet

**Table 14 – Standard Vertical Clearances**

From	To	Standard
Roadway surfaces	Any horizontal projection over surface: measured from the crown of the street to the lowest portion of the structure.	16 feet
Sidewalk surfaces	Any horizontal projection over the surface	8 feet
Roadway surfaces	Tree limbs	14 feet
Alley surfaces	Any horizontal projection over paved surface	14 feet
Bicycle path surfaces	Any horizontal projection over surface	10 feet

Snohomish County PUD is in control of electrical facilities in the City. The Applicant shall coordinate with the PUD for their project. PUD and City staff will work closely with applicants to accomplish appropriate clearances required for design, during construction, and at final build-out. Communication and resolution of required clearances are critical to final design and construction approval of the proposal. Contact PUD for more information regarding service requirements.

#### **4.9.2 Landscaping**

The following apply to landscaping improvements in the right-of-way. The landscaping design criteria in this section are based on transportation safety.

For landscaping requirements, please contact the Community Development Department at 425.263.8000.

Any right-of-way landscaping disturbed by construction activity shall be replaced or restored.

All landscaping shall meet the sight distance requirements in [MMC 17.20.060](#) and [17B.20.050 Sight Distance Triangle](#).

Plant selection shall consider adaptability to climatic, geology, and topographic conditions of the site. Mature tree and shrub canopies may not reach an above ground utility such as street lights and power lines.

The landscaping plan shall follow the Soil Management Plan, providing soil specification, including soil depths. Refer to BMP T5.13 Post Construction Soil Quality and Depth ([Ecology Manual](#)) for general soil specifications.

### **4.9.3 Mailboxes**

United States Postal Service (USPS) must approve all mailbox locations. The City prefers clustering of mail boxes. A Right-of-Way Permit is required for the installation of mailboxes. The approach to mailboxes shall be clear of obstruction.

In addition to any USPS requirements the City minimum installation requirements are:

1. Bottom of mailboxes are forty one to forty five (41-45) inches above the road surface.
2. Front is six (6) inches to eight (8) inches behind face of curb or one foot behind edge of paved roadway.
3. A minimum of five (5) feet of width for sidewalks or pedestrian use must be maintained around all mailboxes.

### **4.9.4 Steps**

Steps and stairways on private property shall not extend into the right-of-way. The first riser shall be at least two feet clear of a public walk.

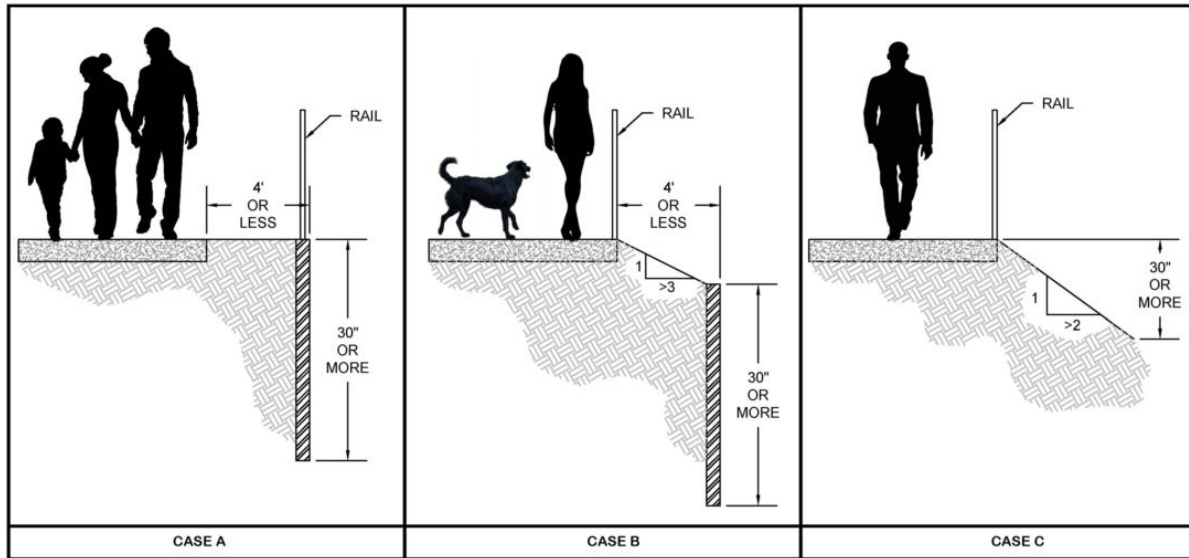
### **4.9.5 Railing**

Railings in the right-of-way shall be consistent with [WSDOT Standard Specifications](#). Railing in the right-of-way shall be installed along a non-motorized transportation facility when there is a drop from the facility of thirty (30) inches or more and:

1. The vertical wall face is less than 4 feet in horizontal distance from the near side face of the facility. See Case A.
2. The vertical wall face is greater than four feet horizontally to the near side face of the facility and the slope to the wall top is steeper than 1V:3H. See Case B.
3. The slopes adjacent to the facility average greater than 1V:2H. See Case C.



**Figure 2. Railings**



#### **4.9.6 Cut-and-fill Slopes**

Side slopes in the recovery zone shall be 4H:1V on the foreslope and 3H:1V or flatter in all other areas. Steeper slopes may be approved by the Public Works Director when supported by a geotechnical report and engineering recommendations. All side slopes shall be designed per the AASHTO Design Manual Clear Zone requirements.

Side slopes shall be stabilized by grass sod or seed, or by other approved plan or surface materials.

#### **4.9.7 Guardrail**

Guardrail shall be provided and installed by the developer as directed by the Engineer of Record and approved by the Public Works Director. All guardrails along public and private roadways shall conform to the criteria of the [WSDOT Standard Plans](#) and [WSDOT Standard Specifications](#).

### **4.10 Curb Ramps & Crosswalks**

All streets with vertical ramped sections shall be consistent with the American Disabilities Act. Alteration or new construction shall meet ADA requirements and standards. If the standards cannot be met, then they shall be constructed to the maximum extent feasible (MEF). When a project impacts an intersection or modification to a curb ramp occurs, the curb ramps shall be retrofitted to meet the current standard. The curb ramps shall be designed following the:

1. [ADA Standards for Accessible Design](#)

2. [2011 Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way \(2011 PROWAG\)](#)

Where a ramp is constructed on one side of the street, a ramp shall also be provided on the opposite side of the street.

## **4.11 Pavement/Surfacing**

The following are the criteria for paving and restoring travelled ways within the right-of-way:

1. Hard surfacing such as HMA or Portland concrete cement (PCC) is required within the right-of-way;
2. Grades steeper than twenty (20) percent (when approved) shall be paved with PCC;
3. Use of permeable pavements in the right-of-way requires review and approval by the Director.
4. Arterial Streets:
  - a. Any pavement for arterial streets shall consider the load bearing capacity of the soils, based on actual field tests, and the traffic-carrying requirements of the roadway.
  - b. The analysis shall include the traffic volume and axle loading, the type and thickness of roadway materials and the recommended method of placement. Pavement sections shall not be less than those required for urban collectors.
  - c. Pavement design must be prepared by a civil engineer licensed in Washington State who is proficient in pavement design. Soils tests are required to assess the California Bearing Ratio (CBR) for the subgrade.
5. Non-arterial Streets:
  - a. Minimum asphalt pavement sections are identified in Section 4.3.7, 4.7.9 and 5.15.
  - b. In areas of pavement restoration or adjacent to existing pavement, reconstruction shall at a minimum match the greater of the existing roadway sections, or these standard requirements, unless otherwise approved.
6. Poor Subgrade:
  - a. The minimum material thicknesses indicated are not acceptable if there is any evidence of instability in the subgrade. This includes standing water, swampy conditions, fine-grained or organic soil, slides, or uneven settlement. If there are any of these characteristics, the soil shall be sampled and tested sufficiently to establish a pavement design that will support the proposed construction. Any deficiencies, including an R-value of less than 55 or a CBR of less than 20, shall be fully considered and compensated for in the design.
7. Pavement Widening:

- a. Any widening of an existing roadway, either to add traveled way or paved shoulder, shall have the same surfacing material as the existing roadway.
- b. When an existing shoulder is to become part of a proposed travel way, a pavement evaluation shall be performed. The shoulder area shall match the existing roadway section or pavement design is required to determine if the shoulder is acceptable or if any improvements are necessary. Designs based on these evaluations are subject to review and approval by the Public Works Director, or their designee.
- c. When a walkway or bikeway is incorporated into a road shoulder, the required shoulder sections, if higher strength, shall govern.

## 4.12 Standard Street Criteria

The following are the minimum criteria required for each street classification. For Alleys refer to local access and Section 4.7.10 Alleys.

**Table 15 - Minimum Street Criteria by Classification**

	Asphalt Paving and Base Course	Curb and Gutter	Storm Drainage	Side Slope	Sidewalk/ Curb Ramp	Street Curves	Minimum Sight Distance	Street Grades
Principal Arterial	Minimum 3" compacted HMA  6" Asphalt Treated Base Course (ATB)  4" Crushed Surface Base Course	WSDOT Standard Plan	City of Mukilteo Standards Chapter 3, MMC 13.12, and Ecology Manual	Current AASHTO Standards for Geometric Design of Highways and Streets	WSDOT Standard Plan/ ADA Standards/ COM Dev. Standards	Current AASHTO Standards for Geometric Design of Highways and Streets	Current AASHTO Standards for Geometric Design of Highways and Streets	9% max., 0.3% min

	Asphalt Paving and Base Course	Curb and Gutter	Storm Drainage	Side Slope	Sidewalk/ Curb Ramp	Street Curves	Minimum Sight Distance	Street Grades
Minor Arterial	Minimum 2" compacted HMA  4" Asphalt Treated Base Course (ATB)  4" Crushed Surface Base Course	WSDOT Standard Plan	City of Mukilteo Development Standards Chapter 3, MMC 13.12, and Ecology Manual	Current AASHTO Standards for Geometric Design of Highways and Streets	WSDOT Standard Plan/ ADA Standards/ COM Dev. Standards	Current AASHTO Standards for Geometric Design of Highways and Streets	Current AASHTO Standards for Geometric Design of Highways and Streets	10% max., 0.3% min
Urban Collector	Minimum 2" compacted HMA  4" Asphalt Treated Base Course (ATB)  3" Crushed Surface Base Course	WSDOT Standard Plan	City of Mukilteo Development Standards Chapter 3, MMC 13.12, and Ecology Manual	Current AASHTO Standards for Geometric Design of Highways and Streets	WSDOT Standard Plan/ ADA Standards/ COM Dev. Standards	Current AASHTO Standards for Geometric Design of Highways and Streets	Current AASHTO Standards for Geometric Design of Highways and Streets	14% max., 0.3% min
Local Access	Minimum 2" compacted HMA  2" Asphalt Treated Base Course (ATB)  6" Crushed Surface Base Course	WSDOT Standard Plan	City of Mukilteo Development Standards Chapter 3, MMC 13.12, and Ecology Manual	Current AASHTO Standards for Geometric Design of Highways and Streets	WSDOT Standard Plan/ ADA Standards/ COM Dev. Standards	Current AASHTO Standards for Geometric Design of Highways and Streets	Current AASHTO Standards for Geometric Design of Highways and Streets	15% max., 0.3% min
Private Street	See Table 11 in Section 4.7.9							

## **4.13 Traffic Control Devices**

The Public Works Director, or their designee, shall approve all traffic control devices. All traffic control devices shall conform to the [MUTCD](#) and City standards.

All signs, such as street name, parking, stop, dead end, speed limit, and non-motorized indicators will be installed according to the approved plans. It is the responsibility of the Permittee to ensure that signs are maintained in good condition until the development and right-of-way are finalized and accepted by the City. Any damaged signs will be replaced by the property owner at her/his expense.

The channelization plan showing pavement marking, permanent signing, and crosswalk locations shall be prepared by a licensed civil engineer and approved by the City prior to permit issuance.

A temporary traffic and pedestrian control plan shall be prepared by a licensed civil engineer and approved by the City prior to permit issuance. The traffic control plan shall follow [MUTCD](#) standards.



# Chapter 5 - Construction

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## 5.1 Standards

Design detail, construction workmanship, and materials shall be in accordance with the technical Standards as outlined in Section 1.4.

## 5.2 Work Hour Restrictions

Construction work hours are defined in [MMC 9.46.080](#) Construction Noise. Construction noise is any sound caused by construction activity including but not limited to site preparation, mobilization, clearing, grading, assembly, erection, demolition, substantial repair, alteration or similar action.

Construction work hours are prohibited between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, and 7:00 p.m. and 9:00 a.m. Saturdays, Sundays and Holidays. Holidays are those that are City recognized holidays. Exemptions to these hours shall be in accordance with WAC [173-60-050](#) and [173-60-080](#).

There may be conditional work hour restrictions on the issued permit due work on roadways which serve schools, ferries, business centers. Check your permit for the most updated work hour restrictions and any additional conditions regarding work hours.

## 5.3 Survey Monuments

Anyone performing construction, maintenance, or other work in the City must protect all survey monuments within the area of work. The Permittee is responsible for all contractors working for him/her. If it is necessary to disturb a survey monument, the City must be notified and a permit from the Department of Natural Resources must be obtained before the disturbance occurs.

Failure to comply with the Washington State requirements RCW [58.04.015](#) regarding monument removal or destruction is a gross misdemeanor and is punishable by a fine and/or imprisonment, and liability for the cost of reestablishment.

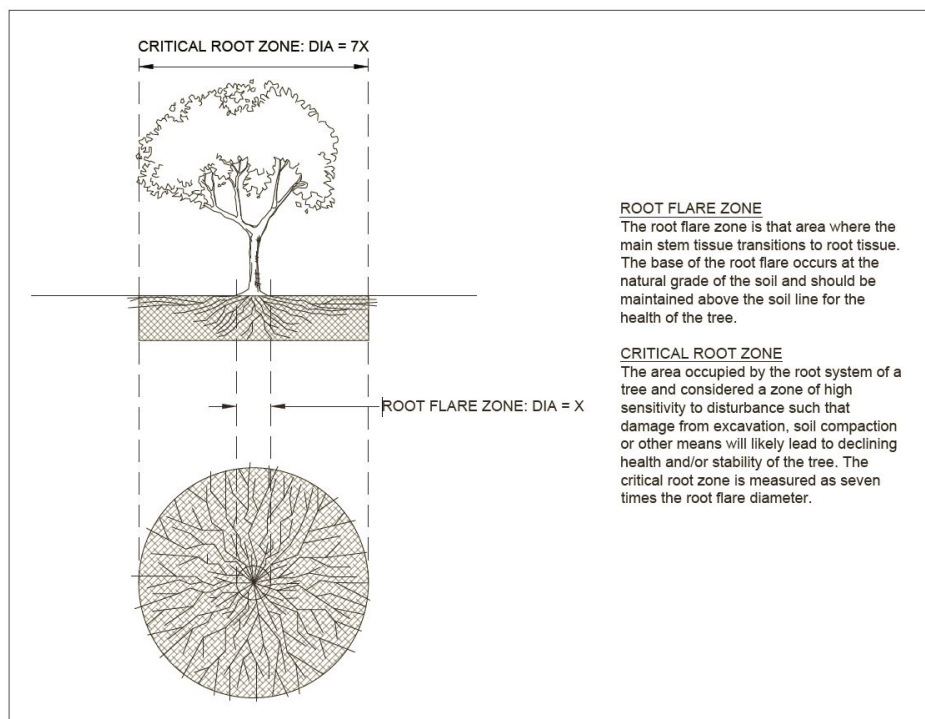
## 5.4 Vegetation Protection

The MMC require that certain trees be retained as a condition of approval on many development projects. Trees are required to be preserved for several reasons, including, but not limited to, maintaining the urban forest, reducing stormwater runoff and erosion, providing habitat for wildlife, and for aesthetic reasons. Trees can be impacted during construction and often the damage is not seen for several months or years after construction. Proper tree protection can benefit not only the tree by reducing stress during construction, but also the developer and property owner by reducing long term costs associated with future maintenance.

Trees and tree root systems must be protected utilizing the following methods:

1. Reducing soil compaction during the construction phase by protecting critical tree root zones; and
2. Prohibiting the stockpiling or disposal of excavated or construction materials in the vegetation retention areas to prevent contaminants from damaging vegetation and soils; and
3. Avoiding excavation or changing the grade near trees that have been designated for protection. If the grade level around a tree is to be raised, a dry rock wall or rock well shall be constructed around the tree. The diameter of this wall or well should be at least equal to the diameter of the tree canopy plus five feet; and
4. Restricting trenching and excavation in critical tree root zone areas (See Figure 3 – Tree Protection During Construction); and
5. Encountering roots over three (3) inches in diameter during excavation. If during construction/excavation, tree roots are encountered which are over three (3) inches in diameter that need to be cut, a licensed arborist and certified tree risk assessor shall evaluate and provide direction to the contractor on what steps to take, and a report on the evaluation shall be provided to the City.
6. Preventing wounds to tree trunks and limbs during the construction phase. In the event that a tree is damaged during construction, a licensed arborist shall conduct a risk assessment and determine if replacement is needed.

**Figure 3. Tree Protection During Construction**





Native Growth Protection Areas (NGPA), critical areas, wetland buffers, geologic sensitive areas, and fish and wildlife habitat conservation areas (both inside and outside the shoreline jurisdiction) shall be protected as outlined in the [MMC](#).

## **5.5 Clean up, Incidental & Collateral Damage**

The contractor is responsible for maintaining the job site during the preparation and construction period. This includes the safety and cleanliness of the job site, and the requirement to minimize disturbances and distractions to nearby residents. The contractor shall clean up the site daily.

The City does not allow steel tracks on pavement, the Permittee and their contractors shall use rubber tired equipment only.

The right-of-way, material storage sites, construction staging areas, and all other areas affected by the work shall be left neat and presentable, and shall be fully restored as necessary to pre-existing or better condition as determined by the City.

Costs associated with the site cleanup and restorations are integral to the project. If the City incurs additional cleanup costs, these costs may be billed to the Permittee or contractor. Moreover, except as provided in RCW [19.122.030](#), any damage or destruction to existing public or private facilities done during the course of work shall be restored at the Permittee's or contractor's expense. This includes restoration of all traffic devices and pavement markings. The Director, or designee, shall determine the extent of damage and order the extent and type of restoration, except as provided in RCW [19.122.030](#).

The City will not give final approval until the site(s) have been restored to the satisfaction of the Public Works Director.

## **5.6 Traffic/Pedestrian Control Plan**

### **5.6.1 Traffic/Pedestrian Control Plan**

The Applicant shall be responsible for traffic/pedestrian control during construction on or along traveled City roads, per [MMC](#) 12.04.190, when traffic patterns or pedestrian travel are disrupted. This includes shoulder work. The traffic/pedestrian control plan shall be approved by the City prior to permit issuance. The traffic/pedestrian control plan shall be consistent with the standards defined in the [MUTCD](#) and RCW [47.36](#). The following basic principles and standards must be observed by all those who perform work within a street right-of-way:

1. Work areas are safe and congestion is minimized; and
2. Motorized and non-motorized traffic is warned, controlled, and protected; and
3. Temporary pedestrian walkways/sidewalks shall be at least five feet wide and meet ADA requirements for accessibility; and

4. Emergency access is maintained; and
5. All traffic is expedited through the work zone to the extent possible.

The traffic/pedestrian control plan shall show the existing right-of-way conditions, such as accesses, channelization, lane widths, all traffic control devices, bicycle/pedestrian paths, bus stops, and pavement edge. The traffic/pedestrian plan must allow for continued emergency service, and minimize pedestrian and business disruption by containing adequate connections and clear signage.

If steel plates are approved for use, the plates shall be pinned and cold mix asphalt shall be added to provide suitable transition from the roadway to the top of the steel plates.

“MOTORCYCLES USE EXTREME CAUTION” signs and appropriate plaques shall be installed for each traffic directions when conditions stated in RCW [47.36.200](#) require them.

The City Inspector may approve field adjustments to traffic and pedestrian control to meet actual conditions.

#### **5.6.2 Temporary Road Closures**

When temporary road closures cannot be avoided, the Permittee shall post “To Be Closed” signs a minimum of seven (7) days prior to the closing. The types and locations of the signs shall be shown on a detour plan. A detour plan must be prepared and submitted to the City at least fourteen (14) working days in advance, and approved prior to the closing of any City street. In addition, the Permittee must notify, in writing, local fire, school, law enforcement authorities, Community transit, and any other affected persons as directed by the Public Works Director, or designee, at least seven (7) days prior to closing.

### **5.7 Haul Route**

If the construction of a proposed development involves significant hauling or large equipment that has the potential to impact the surrounding community, the Director, or designee, may require the Permittee to develop a Haul Route Plan.

When required, the haul route plan must be prepared, submitted, and approved by the City prior to permit issuance. The haul route plan shall address routing, hours of operation, signage and flagging, and daily maintenance.

If the Permittee or their contractor’s traffic fails to use the designated haul route, the Public Works Director, or designee, may prohibit or limit further work on the development until such time as the requirements of the haul route are complied with.

When identified as a need by the SEPA review process or by the Director, or designee, a haul route agreement shall be obtained by the franchised utility, Permittee, developer, or property owner establishing restoration procedures to be performed upon completion of the haul operation.

## 5.8 Staking

In the right-of-way, all surveying and staking must be performed by engineering or surveying firm capable of performing such work. The surveyor directing such work shall be licensed by the State of Washington.

At a minimum, items that require staking include property corners, subgrade elevations, slope (grade) stakes, right-of-way location, drainage structures, and other permanent structures.

A pre-construction meeting will be held with the City prior to permit issuance and the commencement of staking. The minimum staking of streets will be as follows:

1. Stake centerline alignment every 25 feet (50 feet in tangent sections) with cuts and/or fills to subgrade; and
2. Stake top of ballast and top of crushed surfacing at centerline and edge of pavement every 25 feet; and
3. Stake top back of curb at a consistent offset for vertical and horizontal alignment; and
4. Staking shall be maintained throughout construction.

## 5.9 Trenches

The Director may require trenchless methods such as boring or jacking, except when it is demonstrated that trenching methods are not possible due to surface and subsurface conflicts or soil conditions, or when the utility is installed after reconstruction or overlay of the road.

When ground water is anticipated during trenching, a dewatering plan must be provided and approved by the City before permit issuance. If groundwater is encountered during trenching immediately notify the City and a dewatering plan must be provided within two (2) project working days from when the groundwater was first observed, for City approval. No groundwater is allowed to be discharged to the City system unless written approval is given by the City to the Permittee.

Trenches shall conform to the following standards:

1. All granular backfill material will conform to Section 9-03.19 of the [WSDOT Standard Specifications](#); and
2. All crushed surfacing materials will conform to Section 4-04 of the [WSDOT Standard Specifications](#); and
3. All subgrade will be compacted to 95 percent maximum density, as described in Section 2-03 of the [WSDOT Standard Specifications](#); and
4. Backfill compaction and placement will be performed in compliance with the [WSDOT Standard Specifications](#); and
5. Native material may be used as backfill if deemed acceptable by the Permittee's licensed civil engineer who has soil/geotechnical expertise, is licensed by the State of Washington

and is acceptable to the City. Soils test are required to determine if the material is acceptable and to test for adequate compaction. When existing material is used, the top 6" shall be Crushed Surfacing Top Course; and

6. When trenching is within the roadway shoulder(s), the shoulder should be restored to its original or better condition; and
7. When trench is located within the traveled way, trench shall be backfilled with Control Density Fill (CDF). CDF shall meet the requirements of 2-09.3 of the [WSDOT Standard Specifications](#).

If a temporary trench closure is needed, the Contractor shall meet the following standards:

1. Trenches that will receive traffic or that will be left overnight before final restoration shall be covered by a temporary patch or by installation of steel plates. The temporary patch material can be hot mix, cold mix, or asphalt-treated base (ATB) dumped directly into the trench, bladed out, and compacted. The trench must be filled flush to the surrounding surfaces to provide a smooth riding surface; and
2. Use of steel plates requires approval from the Inspector. If approved shall follow Section 5.6.1 of these Standards; and
3. Steel plate(s) shall cover CDF for at least 48 hours prior to pavement placement; and
4. Prior to predicted or possible snow events, the Inspector must be notified of all locations of steel plates.

### **5.9.1 Stormwater Pipe Backfill and Compaction**

All pipe shall be placed on stable earth. If in the opinion of the City inspector, the existing trench foundation is unsatisfactory, then it shall be excavated below grade and backfilled with gravel bedding to support the pipe.

Backfill shall be placed equally on both sides of the pipe or pipe-arch in 6" average depth loose lifts. Maximum lift depth shall not exceed 9". Each lift shall be thoroughly compacted. Compacted lifts must extend at least one pipe diameter on each side of the pipe or to the side of the trench.

Backfill over the pipe shall be performed in accordance with Sections 7-08.3 and 2-03.3(14) C - Method B and C of the WSDOT Standard Specifications.

### **5.10 Traffic Signal Loops**

Induction loops will be constructed pursuant to [WSDOT Standard Specifications](#), [WSDOT Standard Plans](#), and the following:

1. Coordination of disruptions to signal loops during construction will occur at the project pre-construction meeting; and
2. Loops will not be cut into the final lift of new asphalt; and

3. Loops will be installed before the final lift of pavement has been installed; and
4. No spicing of traffic signal loops shall be permitted within the roadway.

## **5.11 Sidewalks and Curb Ramps**

To determine if your project requires frontage improvements which require sidewalks and curb ramps, see Section 4.3.7 and 4.7.9. Those sidewalks designated in the BTW Plan as bike paths or shared use paths will, in addition, meet the minimum width requirements established for said bike paths or shared use paths. All sidewalks designs shall provide for a gradual rather than an abrupt transition between sidewalks of different widths or alignments.

The design and construction of all sidewalks, walkways, and curb ramps will meet the following minimum standards:

1. If removing existing panels, panels shall be removed to the nearest complete and competent panel; and
2. [WSDOT Standard Plan](#), Section F Curbs, Sidewalks and Driveways; and
3. Install an 18-inch root barrier placed between trees and sidewalks/curbs/curb ramps/driveways; and
4. Form and subgrade inspection by the City is required before sidewalk/curb ramp is poured; and
5. Monolithic pour of curb and sidewalk will not be allowed; and
6. Monolithic pour of curb ramps will not be allowed; and
7. Use Class 4000 concrete four-inches thick with a non-slip broom finish, except driveway approaches, where the concrete shall be six-inches thick; and
8. Surfacing shall be Portland cement concrete. The concrete shall be placed and finished per [WSDOT Standard Specifications](#) 8-14.3 (3). Cold weather precautions as set forth in [WSDOT Standard Specifications](#) Sections 5-05.3(14) and 6-02.3(6) shall apply; and
9. All concrete shall be free of postmarks, graffiti, footprints, and tire marks prior to acceptance; and
10. Concrete sidewalks shall be cured for at least 72 hours. During curing time, sidewalk must be protected from pedestrian and vehicle traffic; and
11. An expansion joint consisting of 3/8" or 1/4" x 2". Full depth of premolded joint material shall be placed around fire hydrants, poles, posts, utility castings, and along walls or structures in paved areas; and
12. A dummy joint consisting of 3/8" or 1/4" x 2" of premolded joint material shall be placed in curbs and sidewalks at a maximum of 10-foot intervals (unless as part of a curb ramp, then it shall be a maximum of 15-feet) and at sides of drainage inlets. When curbs and/or sidewalks are placed by slip-forming, a premolded strip up to 1/2" thick and up to full depth may be used; and

13. Dummy joints in sidewalks shall be located so as to match the joints in the curb whether the sidewalk is adjacent to curb or separated by an amenity zone; and
14. Toll marks consisting of 1/4" V-grooves shall be made in sidewalk at five-foot intervals intermediate to the dummy joints; and
15. Interface between curb and adjacent sidewalks on integral pour construction shall be formed with 1/4" radius edging tool. On separate pour construction an expansion joint consisting of 3/8" or 1/4" x 2" full depth of premolded joint material shall be placed between the curb or thickened edge and the adjacent sidewalk.

## **5.12 Landscaping**

The Permittee shall follow the requirements set forth in the City approved Soil Management Plan, as well as the City approved landscaping plans. Any questions regarding construction shall be directed towards the Community Development Department at 425.263.8000.

## **5.13 Grading**

No grading and clearing may take place on a site until a permit has been issued and the City has approved the Construction Stormwater Pollution Prevention Plan (SWPPP) for the project; see Section 3.5.4 for SWPPP requirements. If work will occur during the wet season, October 1 through April 30, a Wet Weather Erosion Control Plan shall be required, see Section 3.5.4

Vegetation cover plays an extremely important role in controlling erosion on construction sites. In most cases, existing, natural vegetation provides the greatest protection of soil surfaces from erosive forces. Grading can have adverse effects on the environment by loosening of soil and making it more susceptible to erosion, changing drainage patterns, possibly reducing the stability of slopes, and creating an inhospitable environment for new plant growth through removal of organic material and compaction.

Drainage areas must be protected during construction. If an area has any type of LID BMP, channel or drainage swale that provides a hydrologic connection to vegetation protection area(s), it must also be protected throughout the construction phase by fencing and use of erosion control measures to prevent untreated runoff from the construction site to flow into the LID BMPs, channel, and/or drainage swales.

On-site grading shall be done in a manner to minimize off-site erosion and siltation in conformance with all statutory requirements, permits, and approved plans. The grading shall be consistent with the controlling grade indicated on the plans. If changes are needed, it will be determined by the Director, or their designee, if it is minor change that can be approved by the Inspector in the field. If it is determined to be a major change that may affect site stability, building height, utilities, etc., a new grading plan shall be submitted and approved by the City before further grading may occur.

The final site grading must direct drainage away from all building structures, as directed by the [International Building Code](#). The final grade of soil surfaces in planting strips must accommodate runoff from sidewalk surfaces cross-sloped to drain toward the street.

## **5.14 Curb, Gutter, Access Approach**

Driveway and access points on all streets shall be designed and constructed in conformance with the following:

1. [WSDOT Standard Plan](#), Section F Curbs, Sidewalks and Driveways; and
2. [A Policy on Geometric Design of Highways and Streets, AASHTO](#); and
3. [Guide for the Development Bicycle Facilities, AASHTO](#); and
4. [ADA Standards for Accessible Design](#); and
5. [2011 Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way \(2011 PROWAG\)](#); and
6. Twenty-four inch wide curb and gutter shall be used only for uniformity or replacement; and
7. Form and subgrade inspection by the City is required before sidewalk is poured; and
8. Monolithic pour of curb and/or sidewalk and driveway will not be allowed; and
9. All curb and gutter shall be constructed with Class 4000 concrete furnished and placed in accordance with [WSDOT Standard Specifications](#), Sections 6-02, 8-04, and 8-14. Cold weather precautions as set forth in [WSDOT Standard Specifications](#) Sections 5-05.3(14) and 6-02.3(6) shall apply; and
10. Subgrade compaction for curbs, gutters, and sidewalks shall meet a minimum 95 percent of maximum density ASTM D1557.
11. Extruded curb is not allowed in the public right-of-way, unless it is temporary and approved by the Public Works Director.
  - a. When used, extruded cement concrete curb shall be anchored to existing pavement by either steel tie bars or adhesive in conformance with [WSDOT Standard Specification](#) Section 8-04.
  - b. When used, extruded asphalt curb shall be anchored by means of tack coat of asphalt in accordance with [WSDOT Standard Specification](#) 8-04.
12. A concrete access approach must have a construction joint at the right-of-way line.

## **5.15 Pavement Restoration**

Trench cuts and other invasive pavement cuts such as “windowing” for pipe depth verification and service line connections in roadways greatly degrade the condition of the pavement, as well as reduce the design life. The most significant damage can be seen in newer pavements. A

restored pavement cut in a newly paved street lowers the condition rating of the pavement. It is the goal of pavement restoration to have a pavement in better or as good as pre-pavement cut condition. This can be achieved through prevention of pavement cuts through utility coordination, and high-quality pavement restoration. All Permittees who create an opening in the right-of-way are responsible for permanent pavement restoration.

Pavement restoration requirements are as follows:

1. Pavement restoration must be completed within 30 days of trench closure; and
2. Temporary cold mix patches shall be removed and replaced within 30 days; and
3. Asphalt pavement removal may be by full depth saw cut or shall be made by equipment which produces a straight line.
4. Asphalt pavement cut widths, based on the final trench width, for pavement restoration/patching shall be according to Table 16 – Pavement Cut Dimensions; however the Inspector may extend cut limits to competent roadway pavement; and
5. The Inspector shall approve the restoration limits before restoration begins; and
6. Cuts in asphalt must be wide enough to accommodate compaction equipment; and
7. Cuts shall be expanded to include joints, panel edges, existing patches or cracks within four feet of the opening; and
8. Cuts shall be expanded to ensure that new longitudinal joints are not located in a wheel path; and
9. The cut face shall be neat, straight and vertical. The corners shall be square; and
10. Tack will be applied to the existing pavement and edge of cut and will be emulsified asphalt grade CSS-1 as specified in the latest version of the WSDOT Standard Specifications. Tack coat will be applied as specified in Section 5-04 of the WSDOT Standard Specifications. Fine course aggregate will be in accordance with Section 9-03.8 of the latest version of the WSDOT Standard Specifications. Lift thickness shall follow WSDOT Standard Specifications as specified in Section 5-04.
11. When an existing asphalt paved street is to be widened, the edge of pavement shall be saw-cut to provide a clean, vertical edge for joining to the new asphalt at the time of the placement of the new asphalt. After placement of the new asphalt section, the joint shall be sealed; and
12. Connection to existing asphalt at centerline, lane edges, and overlay ends shall be made by grinding. Feathering of asphalt is not acceptable without written approval from the Public Works Director.



**Table 16 – Pavement Cut Dimensions**

<b>Trench Depth (feet)</b>	<b>Minimum Cut Beyond Trench (feet) All Four Sides</b>
Up to 4	1.0
More than 4, up to 6	1.5
More than 6, up to 8	2.0
More than 8, up to 10	2.5
More than 10, up to 12	3.0
More than 12, up to 14	3.5
More than 14, up to 16	4.0
More than 16, up to 18	4.5
More than 18, up to 20	5.0
Pavements less than 5 years old	May require full street overlay (check with City)

*Resource: Utility Cuts in Pavement Roads, FHWA-SA-97-049*

A public street shall be overlaid when any one of the following conditions applies:

1. Street cuts parallel to the pavement centerline require a half street overlay from the centerline to the curb line for the entire length of the utility extension. If the utility encroaches on both sides of the centerline, a full street overlay will be required, or;
2. Street cuts consisting of three or more perpendicular (transverse) trenches within 150 feet, measured along the pavement centerline, requires overlay from the curb line to the centerline for the full length. If a trench extends beyond the centerline, the Director may require a full street overlay, or;
3. Street cuts at an angle to the pavement centerline require an overlay from the centerline to the curb line for the entire length of the street cut. If the trenching encroaches on both sides of the centerline, the Director may require a full street overlay, or;
4. When the permit conditions require frontage and/or street improvements and the existing pavement has alligator cracking, the existing pavement must be overlaid from the centerline to the new curb line.
5. When any cuts are made in a street that meets the requirements found in Section 4.3.10 (Pavement Cut Moratorium for Utility Work).

When an overlay is required for the project the following is required:

1. Cold-plane both ends of the overlay perpendicular to the roadway for at least 15 feet to provide a flush transition. For half-street or full-street overlays, cold-planing (grinding) of the entire paving area is required (centerline to gutter or gutter to gutter). When curb and gutter does not exist, the new overlay surface may, at the Director's discretion, be tapered to meet the elevation of adjacent paved surfaces, and;

2. All asphalt joints and tapered transitions shall be sealed with AR4000 or equivalent, and;
3. Testing shall be completed prior to placing any asphalt surface materials on the roadway, the Inspector shall review and approve density test reports, certified by a professional civil engineer licensed in the State of Washington, for the crushed surface base course and the crushed surface top course, and meet the following conditions:
  - a. Testing shall be performed by a certified independent testing laboratory. The cost of testing is the responsibility of the franchise utility or contractor. The testing is not intended to relieve the contractor from any liability for trench restoration, and;
  - b. Material testing may be required for trench backfill (native or imported), asphalt, and concrete, and;
  - c. All densities shall be determined by testing specified in [WSDOT Standard Specifications](#), and;
  - d. Compaction of all lifts of asphalt shall be at an average of 91 percent of maximum density as determined by [WSDOT Standard Specifications](#), and;
  - e. Testing of CDF shall be in accordance with [WSDOT Standard Specifications](#), and;
  - f. The compaction tests shall be performed in maximum increments of two feet. The number of tests required per square foot of material shall be as follows or as directed by the Inspector.
    - i. One test for less than 50 square feet;
    - ii. Two tests for 50 to 100 square feet;
    - iii. Three tests for over 100 to 300 square feet;
    - iv. One test for every 200 square feet over 300 square feet for every 100 lineal feet of crushed rock.

# Chapter 6 - Inspection

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## **6.1 Inspections**

The City's inspectors inspect work performed under an approved permit. These inspections relate to items in the Standards. Other inspections may also be required by the City's Community Development Department.

Inspections for the City's capital improvement projects (CIP) are governed by the CIP contract and are not addressed in this manual.

## **6.2 Inspection by the Applicant**

Some inspections are required to be completed by the Applicant or its contractor.

### **6.2.1 TESC / SWPPP Inspections**

In accordance with Element #12 of the SWMMWW, the project Applicant is required to inspect, maintain, and repair all erosion and sediment control BMPs to assure continued performance of their intended function. Site inspections must be conducted by a person who is knowledgeable in the principles and practices of erosion and sediment control, and who is on-site or on-call at all times. Site inspections must be conducted at least once every calendar week, or after rain events, and the inspector must summarize the results of each inspection in an inspection report that is entered into the log book. For construction sites of one acre or larger that discharge stormwater to waters of the state, a Certified Erosion and Sediment Control Specialist (CESCL) must be identified in the Stormwater Pollution Prevention Plan (SWPPP).

Whenever inspection and/or monitoring reveals that the BMPs identified in the SWPPP are inadequate, due to the actual discharge of or potential discharge to discharge a significant amount of any pollutant, appropriate BMP or design changes shall be implemented immediately.

The Director shall specify inspection and testing requirements applicable to a given project prior to permit issuance; however, the Director may require additional inspections, testing, or professional analysis and recommendations when conditions exist that were not covered in the permit application documents or were not sufficiently known at the time of permit issuance.

### **Recordkeeping and Reporting**

A log book must be maintained for all on-site construction activities and must include a record of the implementation of the SWPPP, any updates to the SWPPP, and the TESC plan, site inspections and the results of any stormwater quality monitoring. A Construction Emergency Contact Sheet must also be kept in the log book and updated regularly.

Updating of the SWPPP must be shown on the SWPPP and on the TESC plan, and must be recorded in the log book. Revisions to the SWPPP must be recorded within 48 hours of implementing the revisions.

Site inspections must be recorded on a site inspection form and placed in the log book within 24 hours of the inspection. The inspection report must include the information provided in the instructions.

Turbidity and pH monitoring must be conducted and reported as required by Department of Ecology. The City shall be notified of any Ecology Permit violations the same day that Ecology is notified.

### **6.2.2 Special Inspections**

When required by the Public Works Director or Designee, special inspection and/or testing shall be performed. Special inspections may be identified at the time of Permit issuance, but can also be required once construction has begun.

## **6.3 Inspection by the City**

### **6.3.1 Authority and Duties of Inspectors**

1. The City Inspectors function as a resource for Permittees and contractors. The Inspector:
  - a. Conducts field investigations;
  - b. Interprets and applies standards;
  - c. Inspects and enforces compliance with permit conditions and City Code;
  - d. Inspects and enforces vegetation protection;
  - e. Inspects and enforces traffic control and pedestrian access requirements;
  - f. Inspects and enforces backfill and restoration requirements;
  - g. Inspects TESC measures;
  - h. Reviews and enforces the Stormwater Pollution Prevention Plan during construction;
  - i. Reviews as-constructed drawings (record drawings).
2. The Inspector has the authority to reject defective material and suspend work that is being done improperly. The Inspector may advise the Applicant or contractor of any faulty work or materials; however, failure of the Inspector to advise the Applicant or contractor does not constitute acceptance or approval. The Inspector has the authority to require revisions to approved engineering plans when necessary due to conflicting field conditions; however it is the Applicant's responsibility to provide reasonable alternatives.

3. The City has the authority to enforce these Standards, as well as other referenced specifications or conditions.
4. The Inspector is not authorized to revise, alter, or relax the provisions of these Standards. Such changes must be approved by the Director.

### **6.3.2 Inspection Requests**

Scheduling required and timely inspections is the responsibility of the project Applicant and its contractor(s).

Call (425) 263- 8000 to schedule an inspection. Public Works/Engineering requires 72-hour notice.

### **6.3.3 Inspection Requirements**

1. At all times during construction, the Permittee/contractor must have the issued permits and approved plans and specifications on the job site.
2. All construction or work for which a permit is required shall be subject to inspection by the City. The City may inspect any project at any stage of the work to determine that adequate control is being exercised.
3. Approval as a result of an inspection shall not be construed to be an approval of a violation of approved codes and City Ordinances.
4. It shall be the duty of the permittee to cause the work to remain accessible and exposed for inspection purposes. Failure to notify the City of readiness for inspection in a timely manner may result in the requirement to remove and/or replace buried or hidden elements. The City shall not be liable for the expense entailed in the removal or replacement of any material required to allow for inspection. (See 6.3.2 for scheduling inspection requests.)
5. Specific inspections relevant to the project are listed on the permit and reviewed at the pre-construction meeting.
6. Engineering inspections may include the items listed below:
  - a. Survey monuments;
  - b. Survey stakes: Construction staking prior to construction. Could include contour lines of boundaries and depth of all existing floodplains, wetlands, channels, swales, streams, storm drainage systems, roads (low spots), bogs, depressions, springs, seeps, swales, ditches, pipes, groundwater, and seasonal standing water; property corners, subgrade elevations, slope (grade) stakes, right-of-way location; field verification of existing and proposed grading contours; or foundation forms elevations (before concrete is poured);
  - c. Work limits; clearing and grading limits; native vegetation protection and critical area buffer protection measures;

- d. Stormwater Pollution Prevention Plan (SWPPP) BMP measures installation and maintenance require the following minimum inspections:
  - i. On-site preconstruction inspection for all sites with high sediment transport potential and / or sites over 1 acre;
  - ii. Installation of initial erosion control measures and BMPs, including construction entrance, staging and stockpile areas, and infiltration BMP area protection;
  - iii. When a SWPPP element has been modified on the project site;
  - iv. Planting. When erosion control planting shows active growth.
- e. Clearing and Grading
  - i. Land-disturbing activities. Whenever work on the site preparation, clearing, grading, excavations, or fill is ready to commence;
  - ii. Rough grading. When all rough grading is complete;
  - iii. Soil Quality and Depth. When the requirements of the Soil Management Plan have been met.
  - iv. Finish Grading. When all work including installation of all drainage structures and other protective devices has been completed;
  - v. Landscaping installation and restoration, plants, root barriers, and irrigation;
- f. Stormwater facilities require the following minimum inspections:
  - i. Bury inspection. Prior to burial of any underground drainage structure;
  - ii. Surface water facilities – materials and installation;
  - iii. All connections to City’s drainage system;
- g. Right-of-Way
  - i. Construction traffic routing; traffic control; signage and channelization;
  - ii. Pavement cuts;
  - iii. Right-of-way pavement restoration;
  - iv. Access;
  - v. Sidewalk, curb and gutter, and curb ramps;
  - vi. Roadway centerline elevations;

- vii. Elevations at curb radii PVC's, PVI's, and PVT's;
  - h. Special Inspections / Other Engineering
    - i. Retaining walls and rockeries;
    - ii. Utility installation, depth and location;
    - iii. Trench backfill/compaction special inspections;
    - iv. Stormwater vault materials testing;
    - v. Geotechnical inspections;
    - vi. Infiltration verification testing;
  - i. Clean-up;
  - j. Punch list;
  - k. Final inspection with record drawing with as-constructed information.
- 6. All inspections test, measurements, or actions required to be performed to assure compliance with the applicable standards of the project shall be performed at the Applicant's expense.

#### **6.3.4 Punch List**

Once construction is substantially complete, the project Applicant is responsible for scheduling a Punch List inspection. Deficient items identified by the City Inspectors shall be rectified prior to scheduling a Final Inspection.

#### **6.3.5 Final Inspection**

A Final Inspection must be scheduled 72 hours in advance. Final Inspections cannot be completed until Record Drawings are approved by the City; and all other Permit Conditions have been met.

#### **6.3.6 Easements**

Fully executed Easements required as a result of the project permit must be recorded with the Snohomish County Auditor's Office. Any changes made to the plan set that may affect the Easement shall be included in the fully executed easement. One conformed copy must be submitted to the City prior to issuance of a final permit.

### **6.3.7 Maintenance Financial Guarantee Release**

Final inspection by the City will be required at the end of the 2 year maintenance financial guarantee period. The Developer shall be responsible for repairing any deficiencies found as a result of City inspection. The installation must pass the City's maintenance inspection prior to release of the maintenance financial guarantee. Refer to Section 1.6.2 of the Standards for requirements.

## **6.4 Modification of Facilities During Construction**

Prior to construction the project applicant and/or contractor shall notify the Public Works Director when conflicts exist between the plans and field conditions. Conflicts shall be resolved (including plan and profile revisions) and resubmitted for approval prior to proceeding with any construction that deviates from the approved plans. Failure to get pre-approval may result in removing the installation.

### **6.4.1 Errors and Omissions**

At the discretion of the Public Works Director, any significant errors or omissions in the approved plans or information used as a basis for such approvals may constitute grounds for withdrawal of the approvals and/or stoppage of any or all permitted work. It shall be the responsibility of the developer or contractor to show cause as to why such work should continue and make such changes in plans that may be required by the Public Works Director before the plans are reapproved.



# Chapter 7 - Violations

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## **7.1 General**

Failure to comply with these Standards and/or approved plans may result in enforcement action including withholding or withdrawing approval of plans or drawings, withholding of bonds, final inspection approval or occupancy certificates, issuance of a stop work order, removal of the work accomplished, or other penalties as provided by the Mukilteo Municipal Code or state law.

## **7.2 Enforcement Process**

Enforcement of these Development Standards shall follow those remedies as allowed in Mukilteo Municipal Code.



# Appendices

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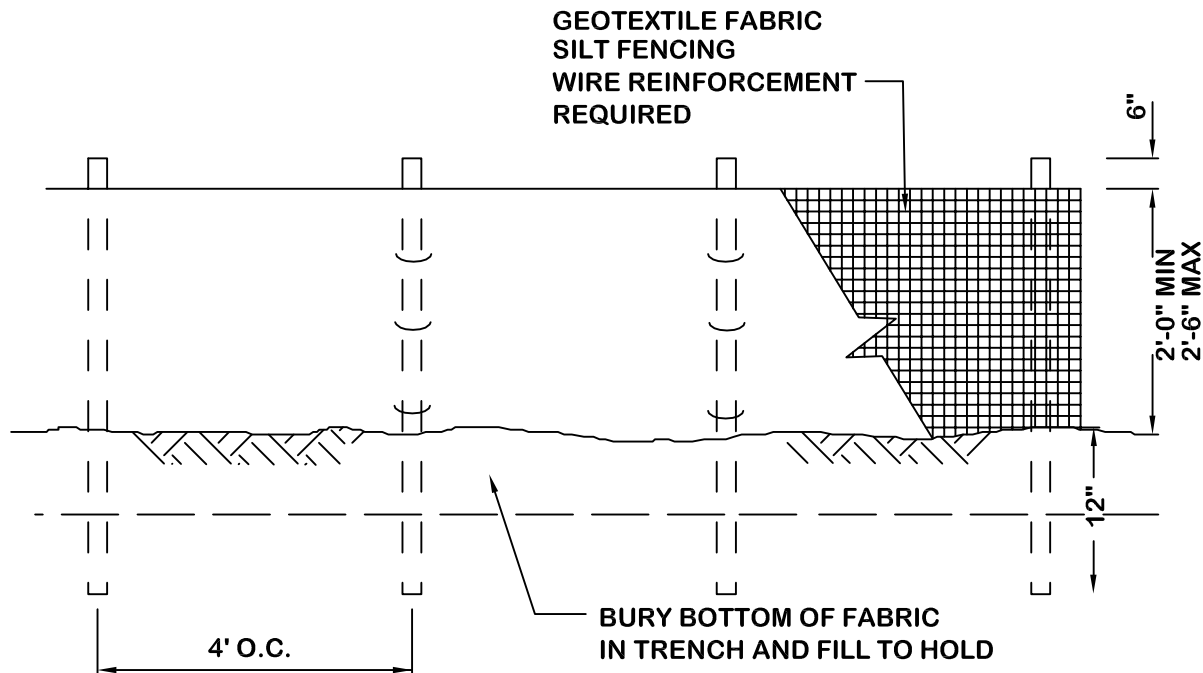
# Appendix A – Standard Plans

**Table A-1 – List of Standard Plans**

2017 Plan Number	Plan Title	Previous Plan Number (for cross-reference)
	<b>EROSION CONTROL</b>	
<b>EC-001</b>	Silt Fence Detail	4-040-008
<b>EC-002</b>	Interceptor Swale Detail	4-040-010
<b>EC-003</b>	Rock Lined Drainage Swale	4-040-011
<b>EC-004</b>	Grass Lined Swale	4-040-012
<b>EC-005</b>	Rock Check Dams	4-040-013
<b>EC-006</b>	Construction Entrance	4-040-014
<b>EC-007</b>	Catch Basin Protection Insert	N/A
	<b>SURFACE WATER</b>	
<b>SW-001</b>	Catch Basin Type-1 (18" Max. Pipe Dia.)	4-080-007
<b>SW-002</b>	Catch Basin Type 1-L (18"-28" Pipe Dia.)	4-080-008
<b>SW-003</b>	Catch Basin Installation Detail Type 1 & 1L	4-080-010
<b>SW-004</b>	Catch Basin Type 2 – 48", 54", 72", 96"	4-080-009
<b>SW-005</b>	Vaned Grate	4-080-016
<b>SW-006</b>	Solid Cover	4-080-024
<b>SW-007</b>	Standard Frame with Vertical or Extruded Curb Installation	4-080-025
<b>SW-008</b>	Thru-Curb Inlet Frame & Grate	4-080-018
<b>SW-009</b>	Manhole Type 4	4-080-012
<b>SW-010</b>	Catch Basin & Manhole Details	4-080-014
<b>SW-011</b>	Locking Manhole Frame Detail	4-080-022
<b>SW-012</b>	Locking Manhole Cover Detail	4-080-023
<b>SW-013</b>	Beveled End Pipe Section	4-080-004
<b>SW-014</b>	Rock Headwall Detail	4-080-005
<b>SW-015</b>	Debris Cage	4-040-006

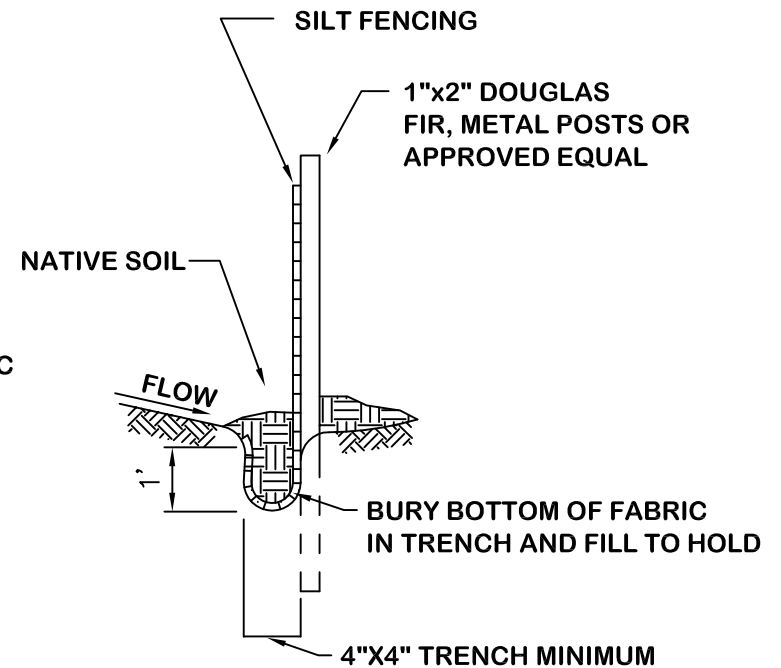
2017 Plan Number	Plan Title	Previous Plan Number (for cross-reference)
<b>SW-016</b>	Trash Rack	4-040-007
<b>SW-017</b>	French Drain	4-080-006
<b>SW-018</b>	Individual Lot & Roof Drain Plan Details	4-040-015
<b>SW-019</b>	Field Tapping of Concrete Pipe	4-080-011
<b>SW-020 through SW-030</b>	RESERVED for FUTURE PLANS	
<b>SW-031</b>	Infiltration System Detail	4-040-005
<b>SW-032</b>	Bioretention	N/A
<b>SW-033</b>	Bioretention with Underdrain	N/A
<b>SW-034</b>	Bioretention with Liner & Underdrain	N/A
<b>SW-035</b>	Curb Bulbout with Sloped Sides Bioretention	N/A
<b>SW-036</b>	Bulbout (in-line) Curb Cut	N/A
<b>SW-037</b>	Presettling Cell with Pipe or Curb Cut	N/A
<b>SW-038</b>	Permeable Pavement Edge Treatments	N/A
<b>SW-039</b>	Stormwater Sediment Forebay with Concrete Trough	N/A
<b>SW-040</b>	Stormwater Energy Dissipater with Piped Inlet	N/A
<b>SW-041</b>	Bioretention Structural Footing	N/A
<b>SW-042</b>	Curb Cut at Walled facility	N/A
<b>SW-043</b>	Curb Cut for Facility with Graded Side Slopes	N/A
<b>SW-044</b>	Boulder Check Dam / Weir	N/A
<b>SW-045</b>	Tree Planting on Bioretention Cell Edge Adjacent to Sidewalk	N/A
<b>SW-046</b>	Tree Planting on Bioretention Cell Edge Adjacent to Curb	N/A
<b>SW-047</b>	Rain Garden & Bioretention Planting Zones	N/A
<b>SW-048</b>	Rain Garden Section	N/A
<b>SW-049</b>	Structural Soil Cells Section	N/A
<b>SW-050</b>	Pervious Concrete Sidewalk	N/A
<b>SW-051</b>	Pervious Concrete Sidewalk Notes	N/A

2017 Plan Number	Plan Title	Previous Plan Number (for cross-reference)
<b>SW-052</b>	Typical Pavement Restoration Pervious Concrete	N/A
<b>SW-053 through SW-075</b>	RESERVED for FUTURE PLANS	
<b>SW-076</b>	Flow restrictor/Oil Pollution Debris Control Device Tee Type (Frop-T) Installation	4-040-002
<b>SW-077</b>	Frop-T Shear Gate Detail	4-040-003
<b>SW-078</b>	Flow restrictor/Oil Pollution Debris Control Device Tee Type (Frop-B) Installation	4-040-004
<b>SW-079</b>	Standard Coalescing Plate Separator	4-040-017
<b>SW-080 through SW-095</b>	RESERVED for FUTURE PLANS	
<b>SW-096</b>	Chain Link Fence	3-501-007
<b>SW-097</b>	Chain Link Gates	3-501-008
<b>SW-098</b>	Wood Fence (for ponds)	N/A
<b>SW-099</b>	Wood Gate (for ponds)	N/A
	<b>TRAFFIC</b>	
<b>TR-001</b>	Roadway Survey Monument w/ Case & Cover	N/A
<b>TR-002</b>	Cul-de-sac Detail	N/A
<b>TR-003</b>	Private Road Hammerhead Turnaround	N/A
<b>TR-004</b>	Curb Ramp Locations	N/A
<b>TR-005</b>	Concrete Replacement Requirements	N/A
<b>TR-006</b>	Crosswalk & Stop Bar Pavement Marking	N/A
<b>TR-007</b>	Bike Lane Symbol & Shared Lane Markings	N/A
	<b>PARKS</b>	
<b>PK-001</b>	Post & Rail Fence	



**NOTES:**

1. SEE BMP C233 OF THE ECOLOGY MANUAL FOR FABRIC SPECIFICATIONS.
2. MAXIMUM SHEET OR OVERLAND FLOW PATH LENGTH = 100' TO FENCE.
3. NO FLOWS GREATER THAN 0.5 CFS.
4. PREFAB FENCE ALLOWED IF REINFORCED AND APPROVED BY CITY INSPECTOR.
5. JOINTS IN FILTER FABRIC SHALL BE OVERLAPPED 6" AT POST.
6. USE STAPLES, WIRE RINGS, OR EQUIVALENT TO ATTACH FABRIC TO FENCE.



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DATE

11/18/2016  
DATE

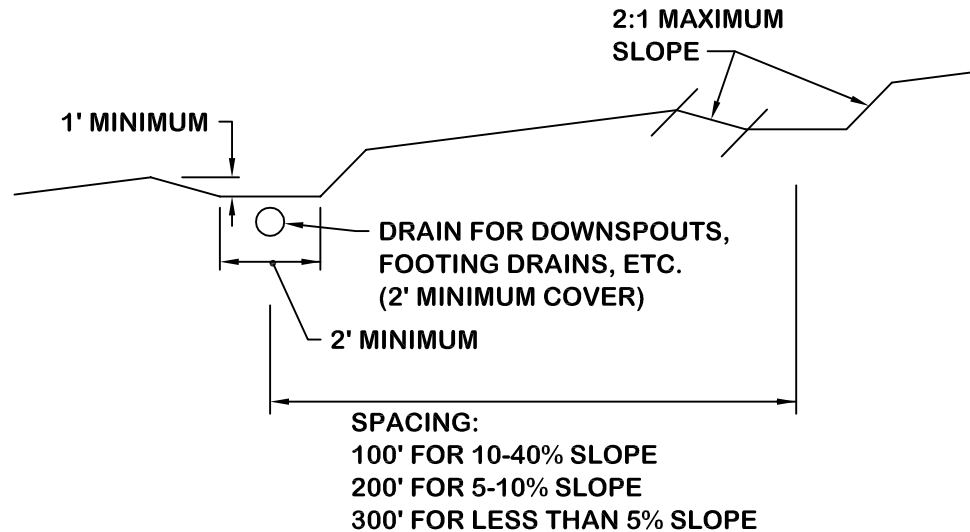
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*[Signature]*  
CITY ENGINEER

11/22/2016  
DATE

**SILT FENCE DETAIL**

STANDARD PLAN NO. EC-001



**MAINTENANCE STANDARDS:**

1. DAMAGE RESULTING FROM RUNOFF OR CONSTRUCTION ACTIVITY SHALL BE REPAIRED IMMEDIATELY
2. IF THE FACILITIES DO NOT REGULARLY RETAIN STORM RUNOFF, THE CAPACITY AND/OR FREQUENCY OF THE DIKES/ SWALES SHALL BE INCREASED
3. MAINTENANCE TO BE PERFORMED BY PROPERTY OWNER
4. INSPECT DIVERSION DIKES AND INTERCEPTOR SWALES ONCE A WEEK AFTER EVERY RAINFALL.



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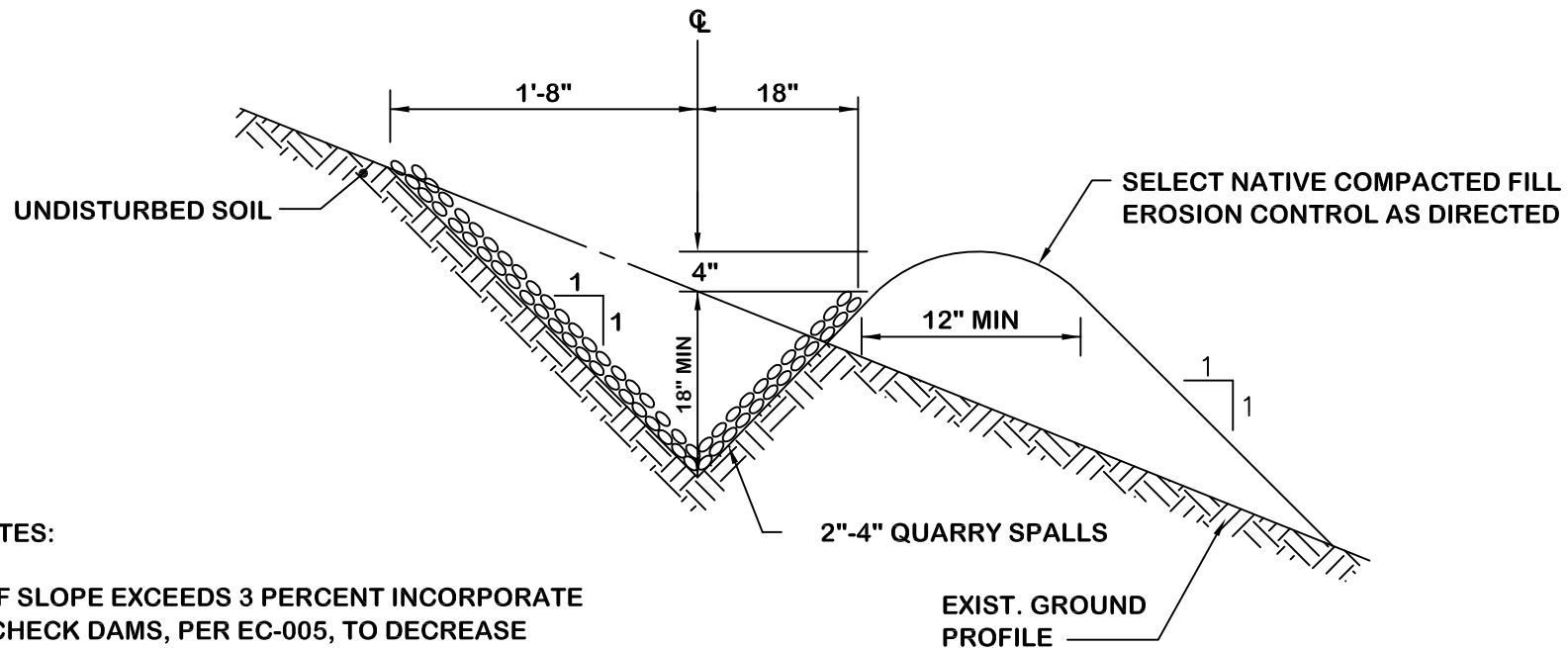
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CITY ENGINEER

11/22/2016  
DATE

**INTERCEPTOR SWALE  
DETAIL**

STANDARD PLAN NO. EC-002





**NOTES:**

1. IF SLOPE EXCEEDS 3 PERCENT INCORPORATE CHECK DAMS, PER EC-005, TO DECREASE VELOCITY AND PROMOTE INFILTRATION.
2. FOR HIGHER VELOCITIES (3-10 FPS) USE LARGER ROCK.
3. SWALE SHOULD HAVE SUFFICIENT CAPACITY TO CONVEY A 10-YEAR STORM AND RESIST EROSION DURING PEAK FLOW.



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DATE

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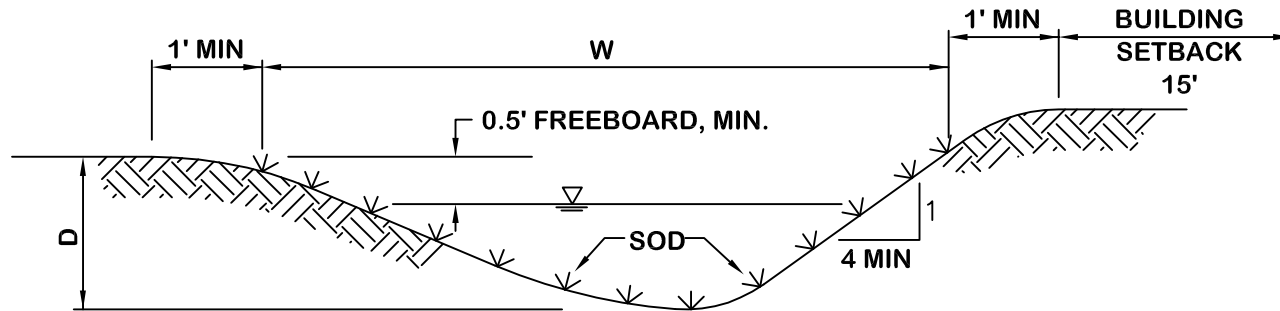
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11/22/2016  
DATE

**ROCK LINED  
DRAINAGE SWALE**

STANDARD PLAN NO. EC-003

FOR USE WHEN CHANNEL SLOPES LESS THAN 5%



**NOTE:**

1. SOD SHALL BE STAPLED IN PLACE.
2. ROUND ALL CORNERS FOR EASE OF MOWING
3. IF DESIGN VELOCITY TO BE VEGETATED BY SEEDING EXCEEDS 2 FPS, A TEMPORARY CHANNEL LINER IS REQUIRED.
4. LOCATE ALL SEDIMENT TRAPS FOR EASE OF MAINTENANCE.
5. DURING CONSTRUCTION AND MAINTENANCE PERIOD REMOVE SEDIMENT WHEN A MAXIMUM OF 6 INCHES IS DEPOSITED AT ANY POINT.
6. MATRIX-TYPE SOIL REINFORCEMENT MAY BE SUBSTITUTED ON PRIOR WRITTEN APPROVAL OF THE CITY ENGINEER.



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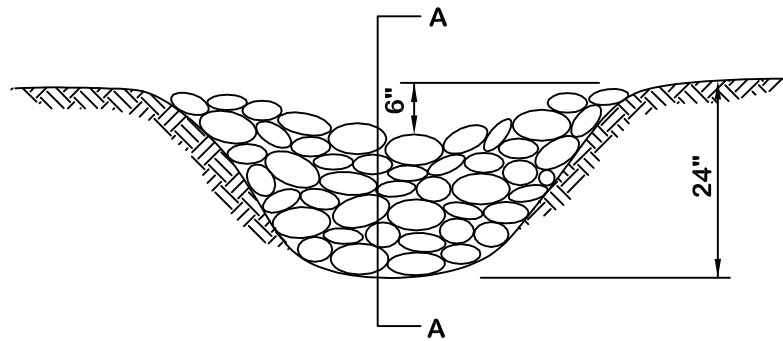
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11/22/2016

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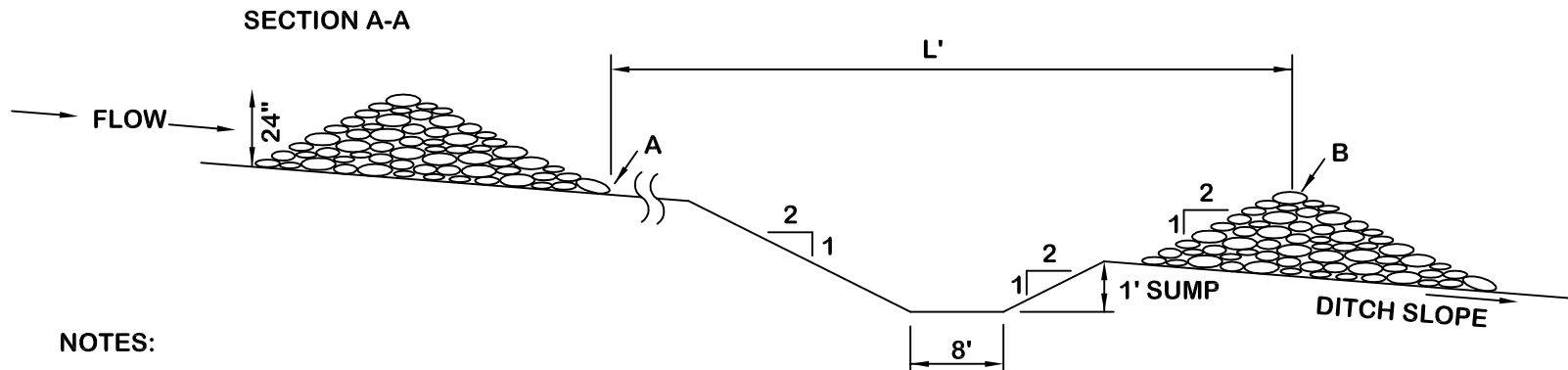
**GRASS LINED  
SWALE**

STANDARD PLAN NO. EC-004



### ROCK CHECK DAM

NTS



#### NOTES:

1. THE DISTANCE SUCH THAT POINTS 'A' AND 'B' ARE OF EQUAL ELEVATION.
2. CONSTRUCT ROCK DAMS FROM ROCK LARGE ENOUGH TO STAY IN PLACE GIVEN EXPECTED FLOW. PLACE ROCK BY HAND OR MECHANICAL MEANS.



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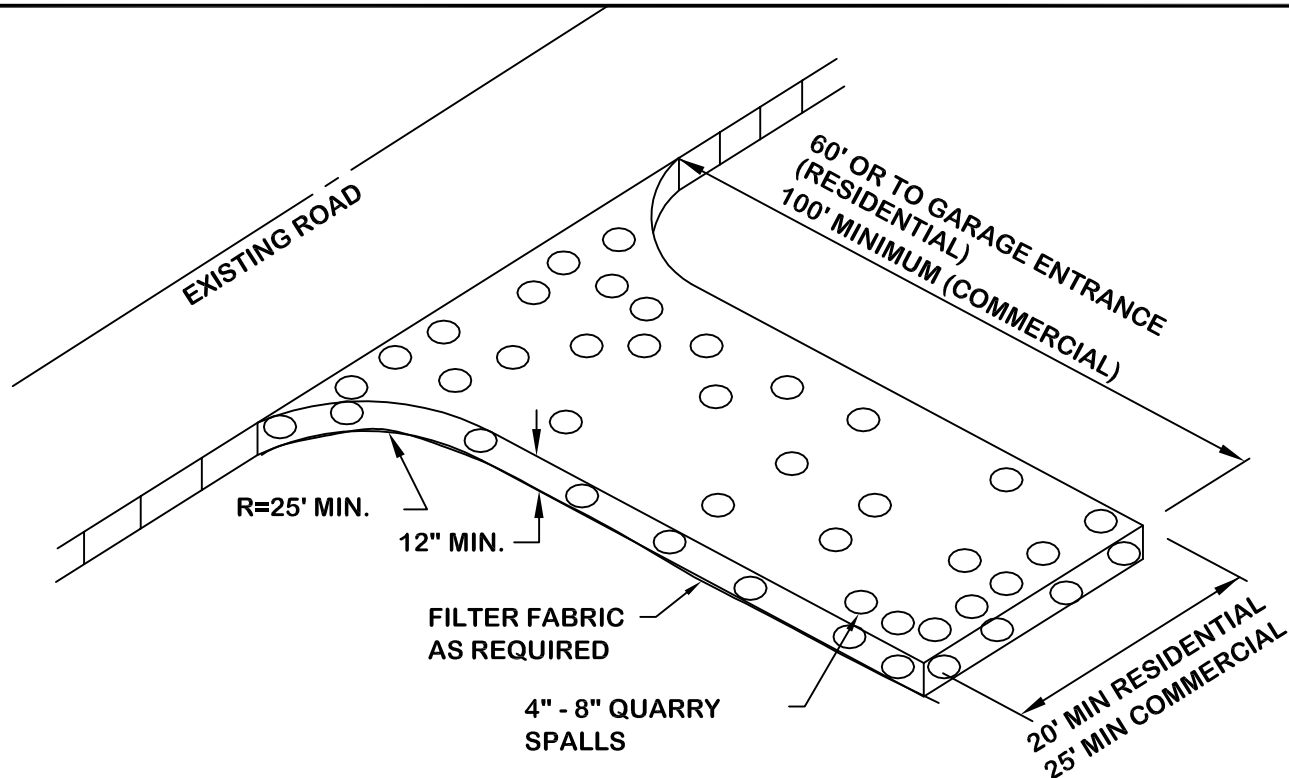
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ROCK CHECK DAMS

STANDARD PLAN NO. EC-005



**NOTES:**

1. THE TEMPORARY CONSTRUCTION ENTRANCE SHALL BE CLEARED OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL. ANY DRAINAGE FACILITIES REQUIRED BECAUSE OF WASHING SHOULD BE CONSTRUCTED ACCORDING TO SPECIFICATIONS IN THE PLAN. IF WASH RACKS ARE USED, THEY SHOULD BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
2. GRAVEL SHALL BE CRUSHED BALLAST ROCK, 4" TO 8" IN DIAMETER; INSTALLED 8" TO 12" IN DEPTH ACROSS THE FULL WIDTH OF THE VEHICULAR INGRESS AND EGRESS AREA. THE LENGTH OF ENTRANCE SHALL BE A MINIMUM OF 100 FEET FOR COMMERCIAL SITES; AND 60 FEET FOR RESIDENTIAL SITES. CRUSHED CONCRETE IS NOT ALLOWED AS BALLAST.
3. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY AND ANY STORM DRAINAGE FACILITIES. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2" STONE, AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEAN OUT ANY

STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAY OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

4. ANY SEDIMENT THAT IS TRACKED ONTO PAVEMENT SHALL BE REMOVED BY SHOVELING OR STREET SWEEPING. THE SEDIMENT COLLECTED BY SWEEPING SHALL BE REMOVED OR STABILIZED ON SITE. THE PAVEMENT SHALL NOT BE CLEANED BY WASHING DOWN THE STREET, EXCEPT WHEN HIGH EFFICIENCY SWEEPING IS INEFFECTIVE AND THERE IS A THREAT TO PUBLIC SAFETY. IF IT IS NECESSARY TO WASH THE STREETS, THE CONSTRUCTION OF A SMALL SUMP TO CONTAIN THE WASH WATER SHALL BE CONSIDERED. THE SEDIMENT WOULD THEN BE WASHED INTO THE SUMP WHERE IT CAN BE CONTROLLED.
5. PERFORM STREET SWEEPING BY HAND OR WITH A HIGH EFFICIENCY SWEEPER. DO NOT USE A NON-HIGH EFFICIENCY MECHANICAL SWEEPER BECAUSE THIS CREATES DUST AND THROWS SOILS INTO STORM SYSTEMS OR CONVEYANCE DITCHES.



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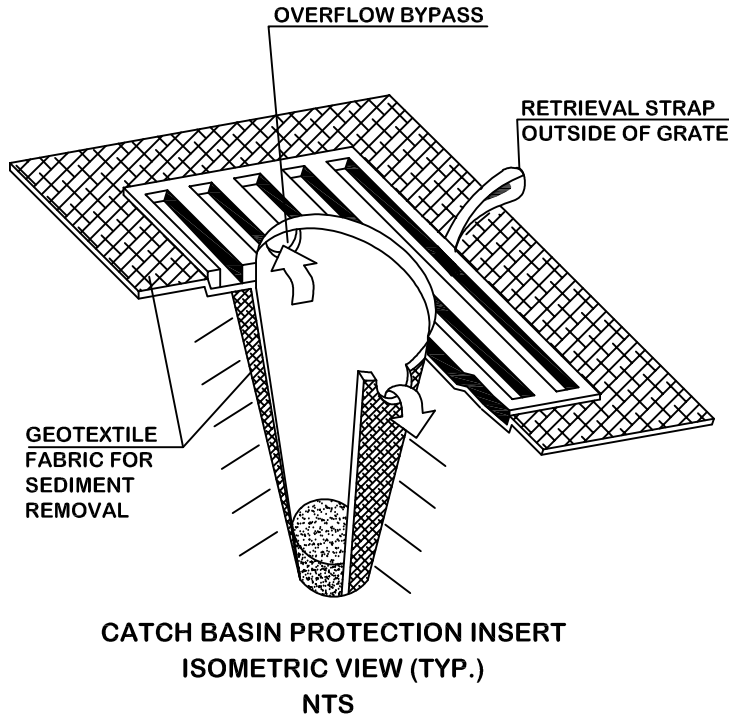
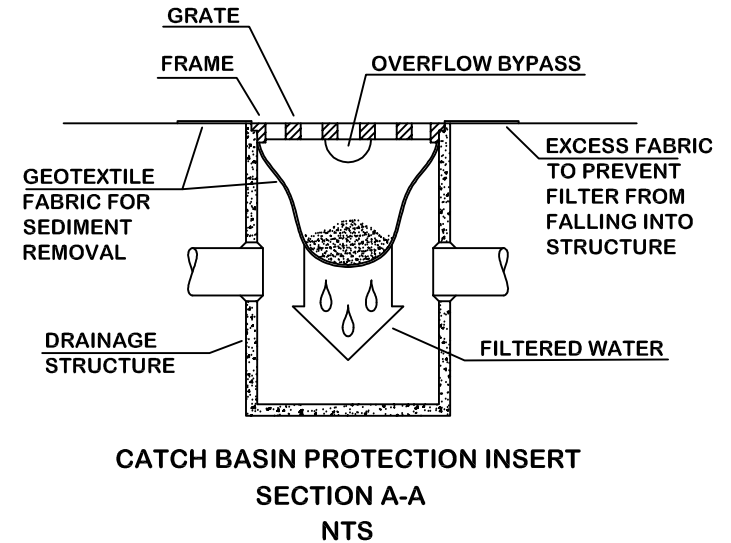
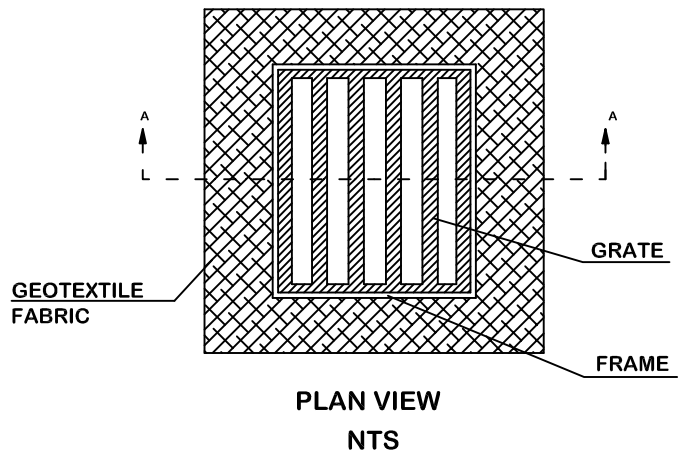
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**CONSTRUCTION  
ENTRANCE**

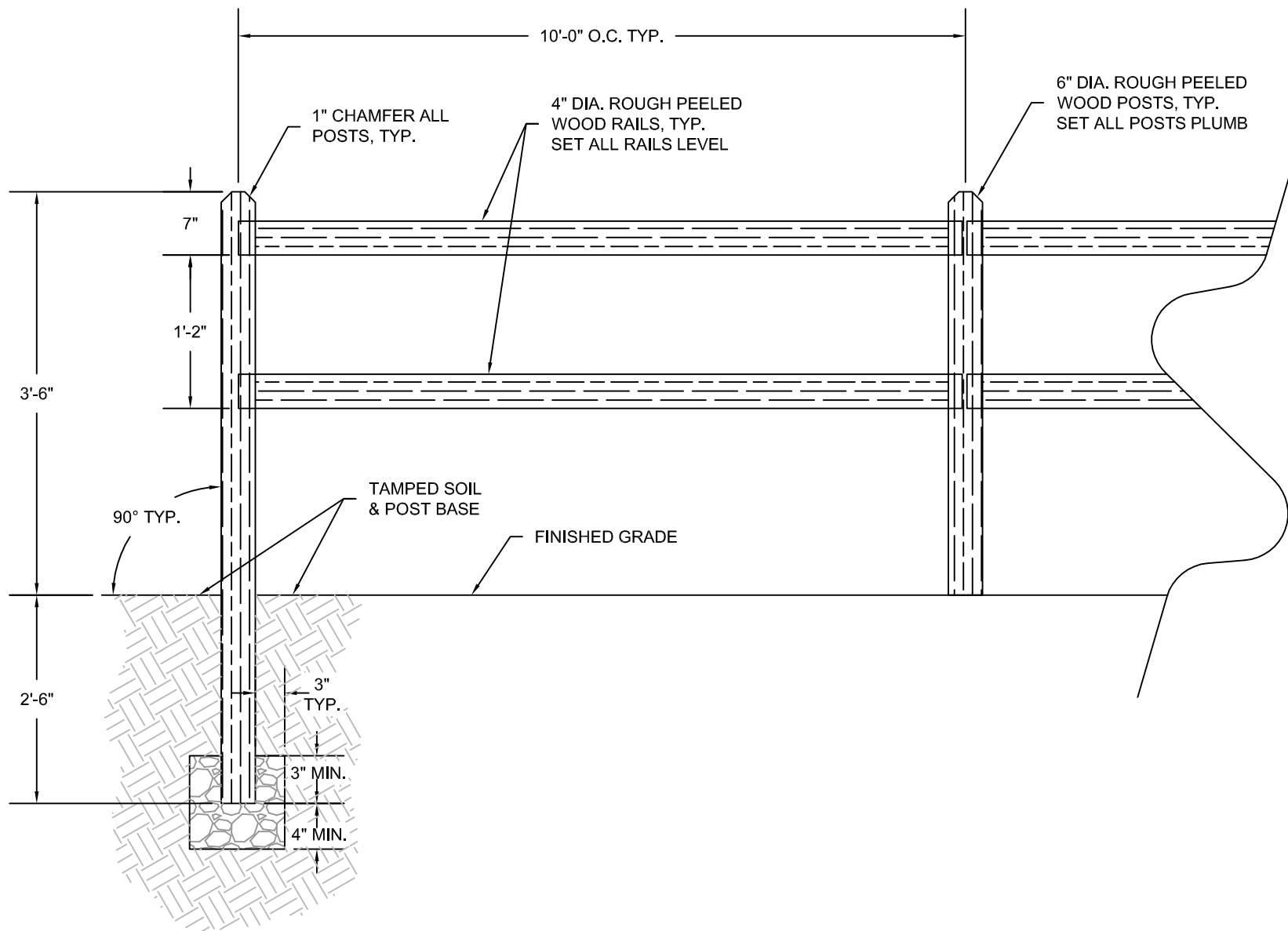
STANDARD PLAN NO.

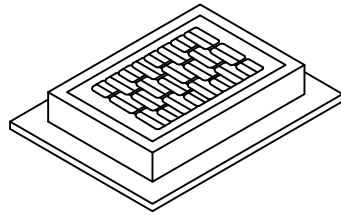
EC-006



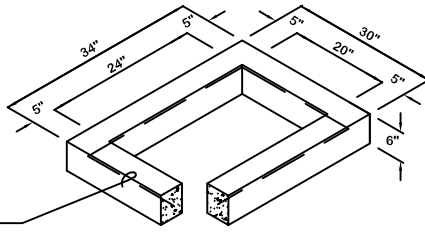
**NOTES:**

1. THE LIMITED SEDIMENT STORAGE CAPACITY INCREASES THE AMOUNT OF INSPECTION AND MAINTENANCE REQUIRED, WHICH MAY BE DAILY FOR HEAVY SEDIMENT LOADS. TO REDUCE MAINTENANCE REQUIREMENTS COMBINE A CATCHBASIN FILTER WITH ANOTHER TYPE OF INLET PROTECTION.
2. INSPECT CATCH BASIN FILTERS FREQUENTLY, ESPECIALLY AFTER STORM EVENTS. CLEAN AND REPLACE CLOGGED INSERTS.
3. DO NOT WASH SEDIMENT INTO STORM DRAINS WHILE CLEANING. SPREAD ALL EXCAVATED MATERIAL EVENLY OVER THE SURROUNDING LAND AREA OR STOCKPILE AND STABILIZE AS APPROPRIATE.

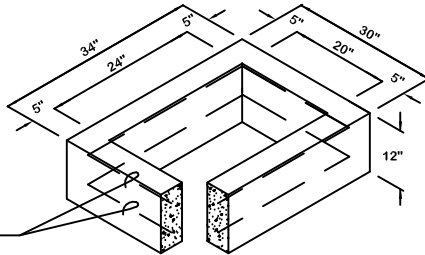




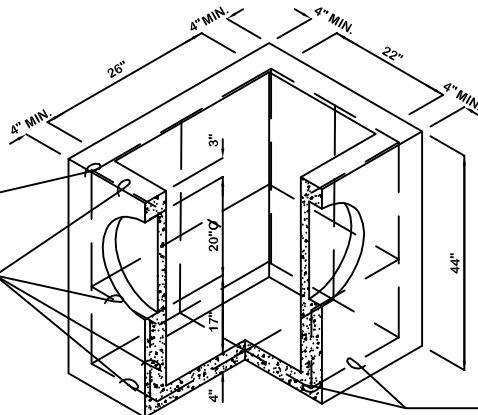
FRAME AND  
VANED GRATE



6" RISER SECTION



12" RISER SECTION

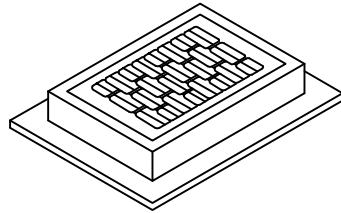


PRECAST BASE SECTION  
(MEASUREMENT AT THE TOP  
OF THE BASE)

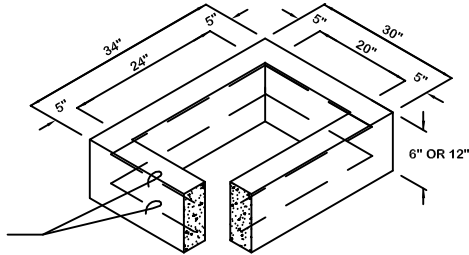
NOTES:

1. CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 (AASHTOM 199) & C890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE WSDOT/APWA STANDARD SPECIFICATIONS.
2. AS AN ACCEPTABLE ALTERNATIVE TO REBAR, WELDED WIRE FABRIC HAVING A MIN. AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY TO ASTM A497 (AASHTOM 221). WIRE FABRIC SHALL NOT BE PLACED IN KNOCKOUTS.
3. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000.
4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN AND 2.5" MAX. ALL PIPE SHALL BE INSTALLED IN FACTORY PROVIDED KNOCKOUTS. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT.
5. KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAM. PLUS CATCH BASIN WALL THICKNESS.
6. KNOCKOUTS MAY BE ON ALL 4 SIDES, WITH MAX. DIAM. OF 20". KNOCKOUTS MAY BE EITHER ROUND OR "D" SHAPE.
7. THE MAX. DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERT IS 5'-0".
8. THE TAPER ON THE SIDES OF THE PRECAST BASE SECTION AND RISER SECTION SHALL NOT EXCEED  $\frac{1}{2}$ "/FT.
9. CATCH BASIN INSERT FRAME AND GRATE SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS AND MEET STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR-F-621D. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
10. FRAME AND GRATE MAY BE INSTALLED WITH FLANGE DOWN OR CAST INTO RISER.
11. FOR CATCH BASINS IN PARKING LOTS REFER TO WSDOT/APWA STANDARD DWG. B-5.60.
12. EDGE OF RISER OR BRICK SHALL NOT BE MORE THAN 2" FROM VERTICAL EDGE OF CATCH BASIN WALL.
13. MINIMUM 4" ADJUSTMENT SECTION BETWEEN BOTTOM OF GRATE AND TOP OF BASE SECTION.
14. GROUT ALL JOINTS INSIDE AND OUTSIDE.

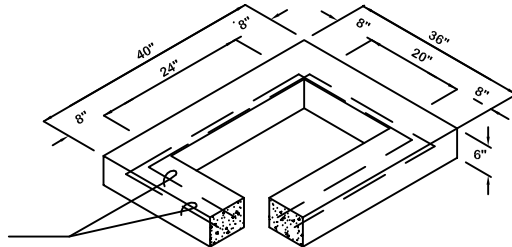




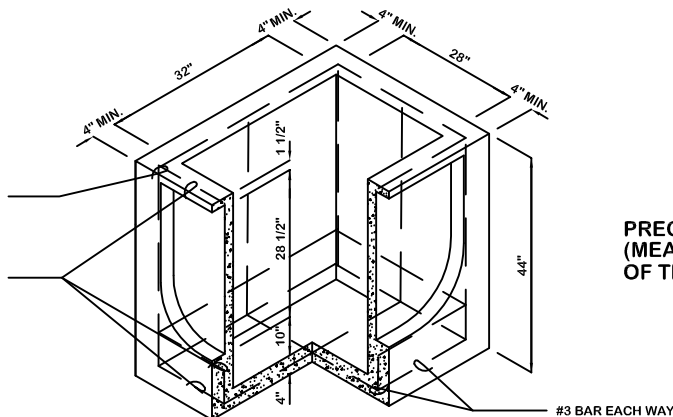
FRAME AND  
VANED GRATE



RISER SECTION



6" REDUCING SECTION



PRECAST BASE SECTION  
(MEASUREMENT AT THE TOP  
OF THE BASE)

NOTES:

1. CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 (AASHTOM 199) & C890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE WSDOT/APWA STANDARD SPECIFICATIONS.
2. AS AN ACCEPTABLE ALTERNATIVE TO REBAR, WELDED WIRE FABRIC HAVING A MIN. AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY TO ASTM A497 (AASHTOM 221). WIRE FABRIC SHALL NOT BE PLACED IN KNOCKOUTS.
3. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000.
4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN AND 2.5" MAX. ALL PIPE SHALL BE INSTALLED IN FACTORY PROVIDED KNOCKOUTS. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT.
5. KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAM. PLUS CATCH BASIN WALL THICKNESS.
6. KNOCKOUTS MAY BE ON ALL 4 SIDES, WITH MAX. DIAM. OF 28". KNOCKOUTS MAY BE EITHER ROUND OR "D" SHAPE.
7. THE MAX. DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERT IS 5'-0".
8. THE TAPER ON THE SIDES OF THE PRECAST BASE SECTION AND RISER SECTION SHALL NOT EXCEED  $\frac{1}{2}$ "/FT.
9. CATCH BASIN INSERT FRAME AND GRATE SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS AND MEET STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR-F-62ID. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
10. FRAME AND GRATE MAY BE INSTALLED WITH FLANGE DOWN OR CAST INTO RISER.
11. FOR CATCH BASINS IN PARKING LOTS REFER TO WSDOT/APWA STANDARD DWG. B-5.60.
12. EDGE OF REDUCING SECTION OR BRICK SHALL NOT BE MORE THAN 2" FROM VERTICAL EDGE OF CATCH BASIN WALL.
13. MINIMUM 4" ADJUSTMENT SECTION BETWEEN BOTTOM OF GRATE AND TOP OF BASE SECTION.



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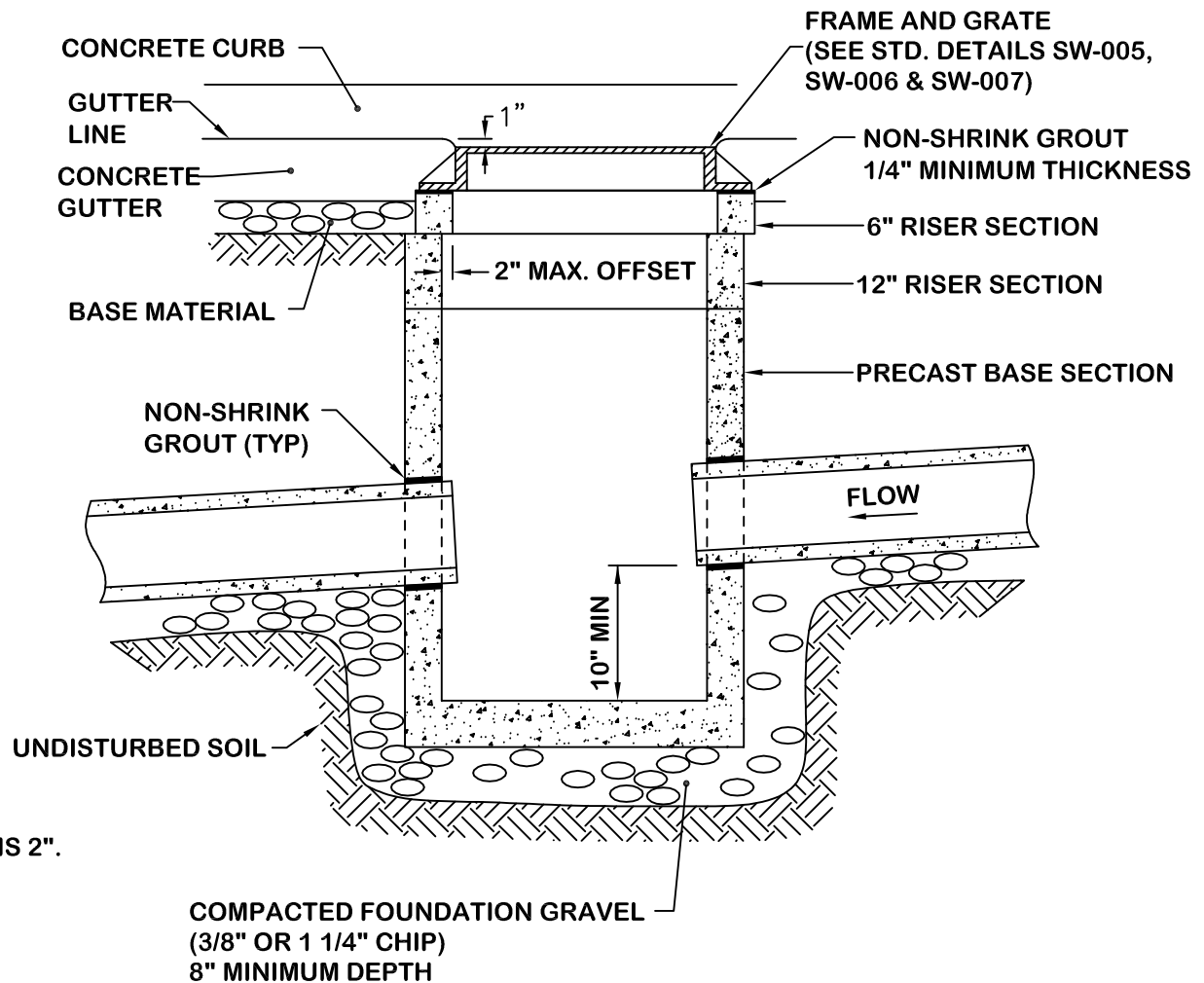
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CATCH BASIN TYPE-1L  
(18"-28" PIPE DIA.)

STANDARD PLAN NO.

SW-002





**NOTES:**

1. MAX OFFSET FOR ENTIRE STRUCTURE IS 2".



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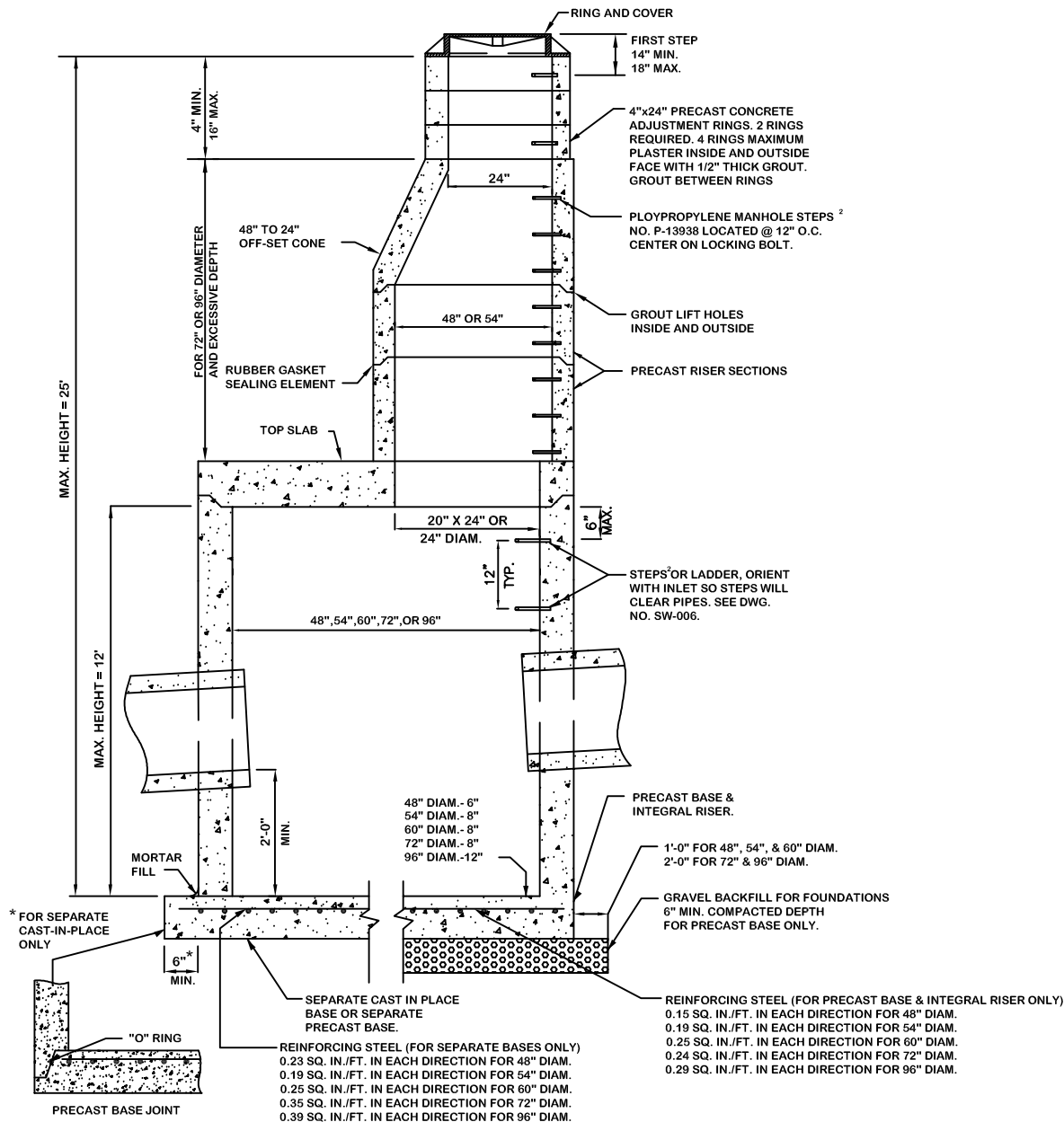
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**CATCH BASIN  
INSTALLATION DETAIL  
TYPE 1 & 1L**

STANDARD PLAN NO. SW-003



#### NOTES:

1. CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 (AASHTOM 199) & C890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE WSDOT/APWA STANDARD SPECIFICATIONS.
2. HANDHOLDS IN ADJUSTMENT SECTION SHALL HAVE 3" MIN. CLEARANCE. STEPS IN CATCH BASIN SHALL HAVE 6" MIN. CLEARANCE. SEE DWG. SW-010, CATCH BASIN DETAILS. HANDHOLDS SHALL BE PLACED IN ALTERNATING GRADE RINGS OR LEVELING BRICK COURSE WITH A MIN. OF ONE HANDHOLD BETWEEN THE LAST STEP AND TOP OF THE MANHOLE.
3. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000.
4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT. PIPE SHALL BE INSTALLED ONLY IN FACTORY KNOCKOUTS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. KNOCKOUT OR CUTOUT HOLE SIZE SHALL EQUAL PIPE OUTER DIAM. PLUS CATCH BASIN WALL THICKNESS. MAX HOLE SIZE SHALL BE 36" FOR 48" CATCH BASIN, 42" FOR 54" C.B., 48" FOR 60" C.B., 60" FOR 72" C.B., 84" FOR 96" C.B. MIN. DISTANCE BETWEEN HOLES SHALL BE 8" FOR 48", 54" AND 60" C.B.; 12" FOR 72" AND 96" C.B.
6. CATCH BASIN FRAMES AND GRATES SHALL BE IN ACCORDANCE WITH STANDARD PLANS AND MEET STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR-F-621D. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
7. ALL BASE REINFORCING STEEL SHALL HAVE A MIN. YIELD STRENGTH OF 60,000 PSI AND BE PLACED IN THE UPPER HALF OF THE BASE WITH 1" MIN. CLEARANCE.
8. MIN. SOIL BEARING VALUE SHALL EQUAL 3,300 POUNDS PER SQUARE FOOT.
9. FOR DETAILS SHOWING LADDER, STEPS, HANDRAILS AND TOP SLABS, SEE DWG. NO. SW-010.
10. SEE THE WSDOT/APWA STANDARD SPECIFICATIONS SEC. 7-05.3 FOR JOINT REQUIREMENTS.



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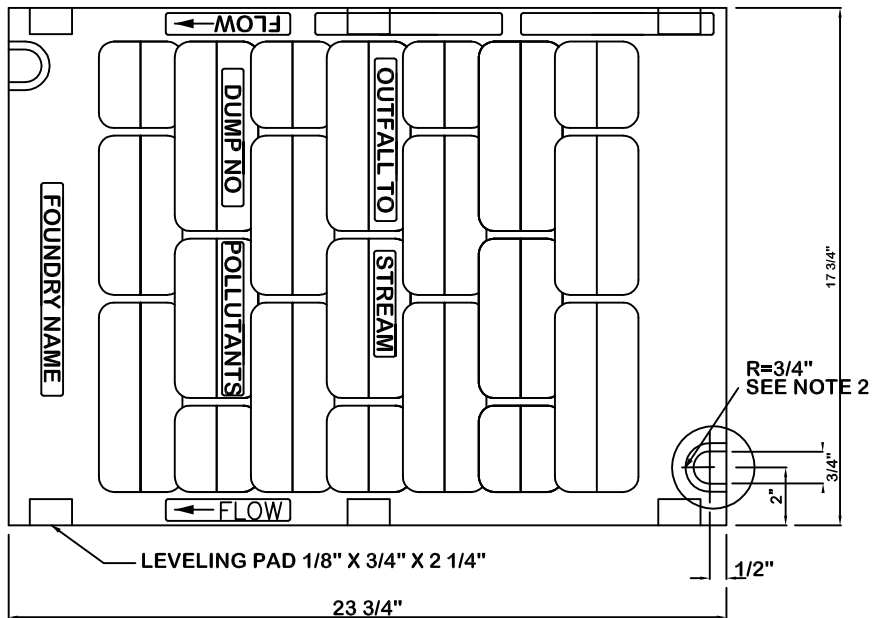
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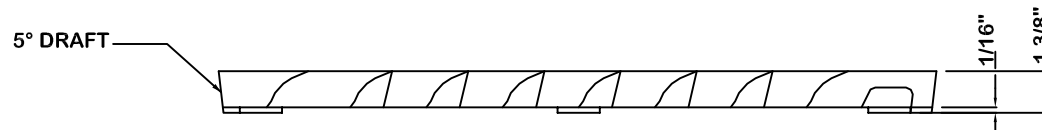
**CATCH BASIN TYPE-2**  
**48", 54", 72", 96"**

STANDARD PLAN NO.

SW-004



PLAN



ELEVATION

**NOTES:**

1. SELF-LOCK VANED GRATE MANUFACTURER SUBJECT TO APPROVAL BY ENGINEER.
2. USE WITH TWO LOCKING BOLTS 5/8"-11 NC STAINLESS TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) CAP SCREWS 2" LONG.
3. MATERIAL IS DUCTILE IRON ASTM A536 GRADE 80-55-06.
4. "OUTFALL TO STREAM DUMP NO POLLUTANTS" MAY BE LOCATED ON BORDER AREA.
5. SEE STANDARD PLAN SW-007 FOR FRAME.



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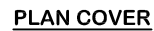
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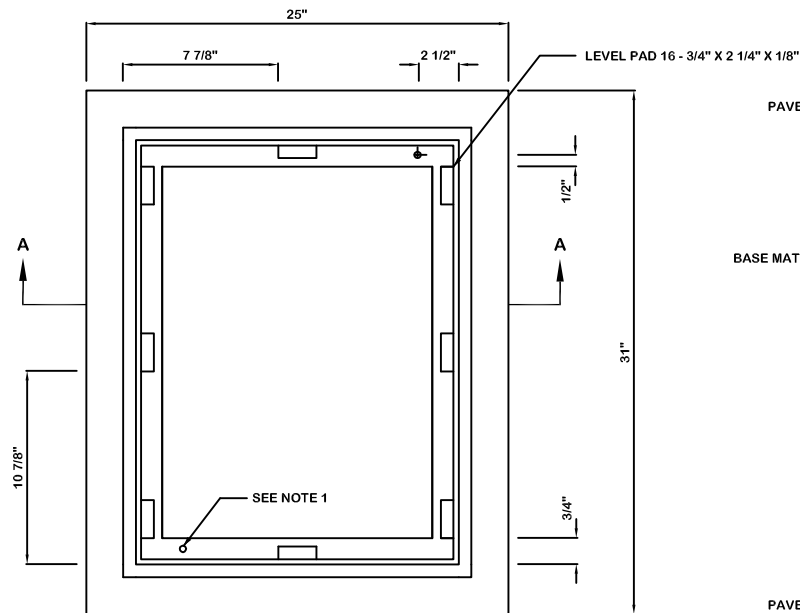
**VANED GRATE**

STANDARD PLAN NO. SW-005

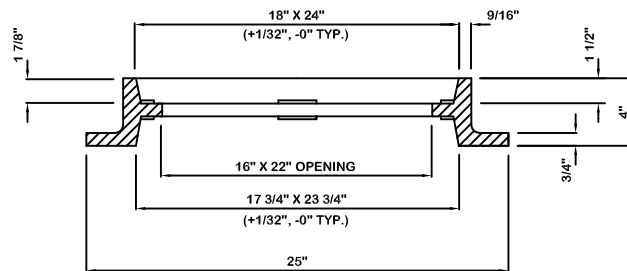


- 1. USE WITH FRAME (DWG. NO. SW-007) DRILLED AND TAPPED FOR LOCKING BOLTS.**
- 2. USE WITH TWO LOCKING BOLTS 5/8"-11 NC STAINLESS STEEL TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) CAP SCREWS, 2" LONG.**
- 3. MATERIAL IS CAST IRON PER ASTM A48 CLASS 30.**
- 4. RAISED WORDING "DRAIN" OR "STORM" ON ALL COVERS.**
- 5. IF LOCATED WITHIN A PEDESTRIAN ACCESS ROUTE COVER SHALL BE COATED WITH NON-SLIP/NON-SKID SURFACING PER DEVELOPMENT STANDARDS**

**SECTION A-A**



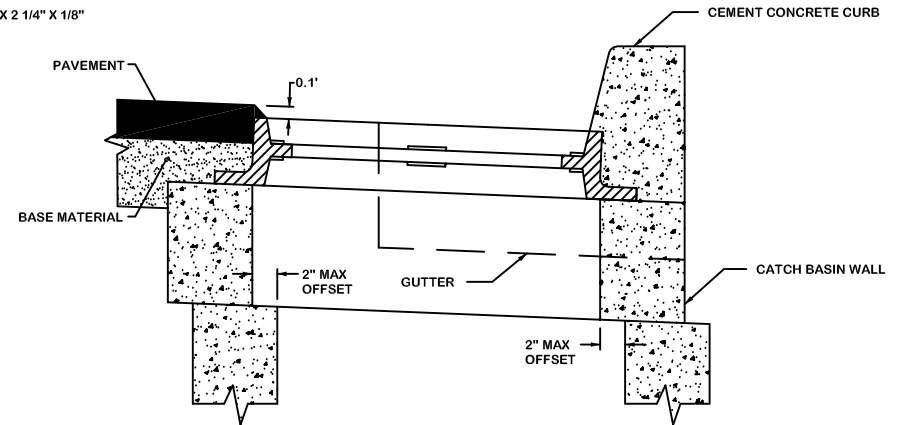
**PLAN**



**SECTION A-A**

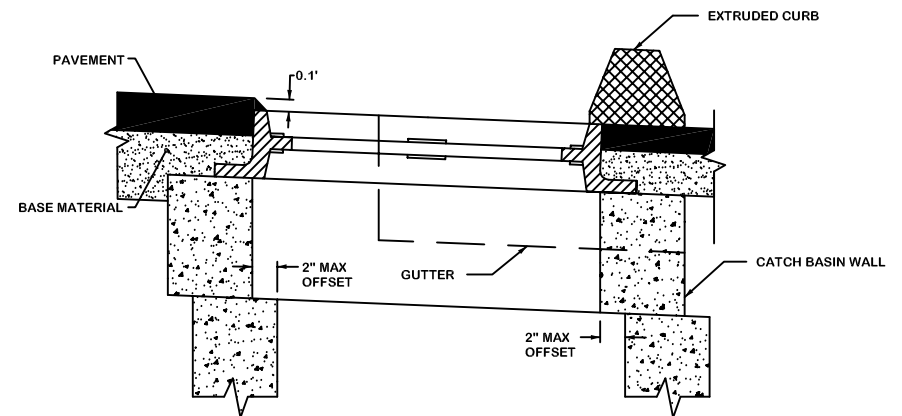
**NOTES:**

1. DRILL AND TAP FOR, AND PROVIDE, TWO LOCKING BOLTS 5/8"-11 NC STAINLESS TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) CAP SCREWS 2" LONG WHEN USED WITH SOLID COVER (DWG. NO. SW-006).
2. FRAME MATERIAL IS CAST IRON PER ASTM A48 CLASS 30.
3. SET FRAME TO GRADE AND CONSTRUCT ROAD AND GUTTER TO BE FLUSH WITH FRAME.
4. GROUT ALL JOINTS INSIDE AND OUTSIDE.



**VERTICAL CURB**

SEE NOTE 4



**EXTRUDED CURB**

SEE NOTE 4



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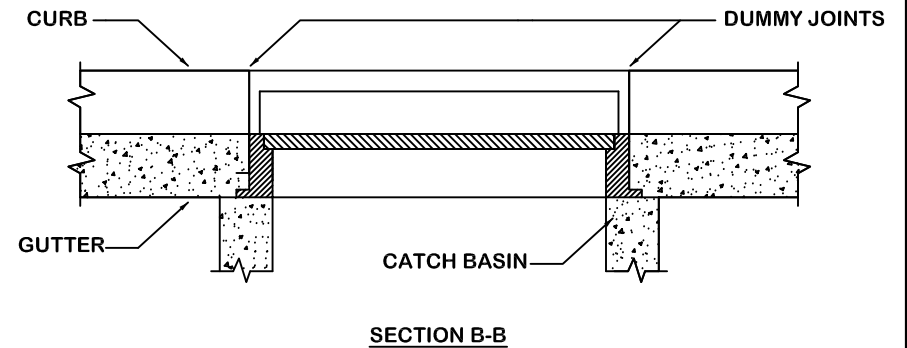
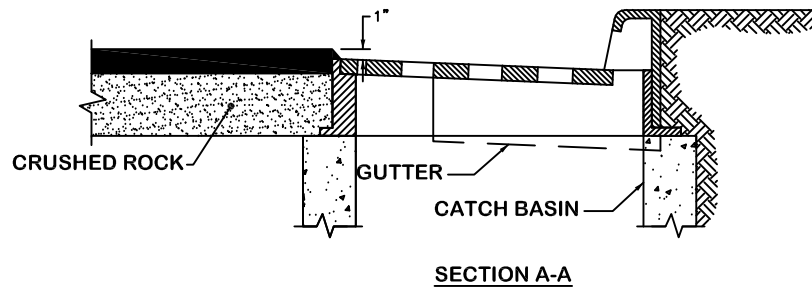
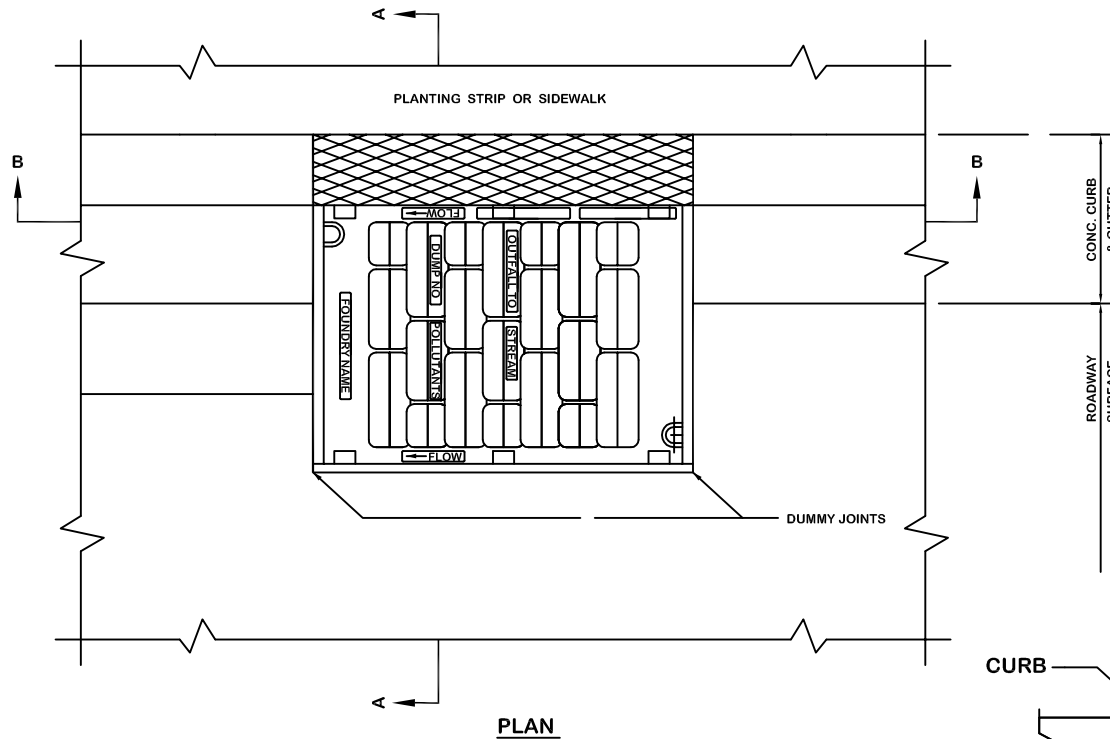
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**STANDARD FRAME WITH  
VERTICAL OR EXTENDED  
CURB INSTALLATION**

STANDARD PLAN NO.

SW-007



NOTES:  
1. SET TO GRADE AND CONSTRUCT ROAD AND GUTTER TO BE FLUSH WITH FRAME.



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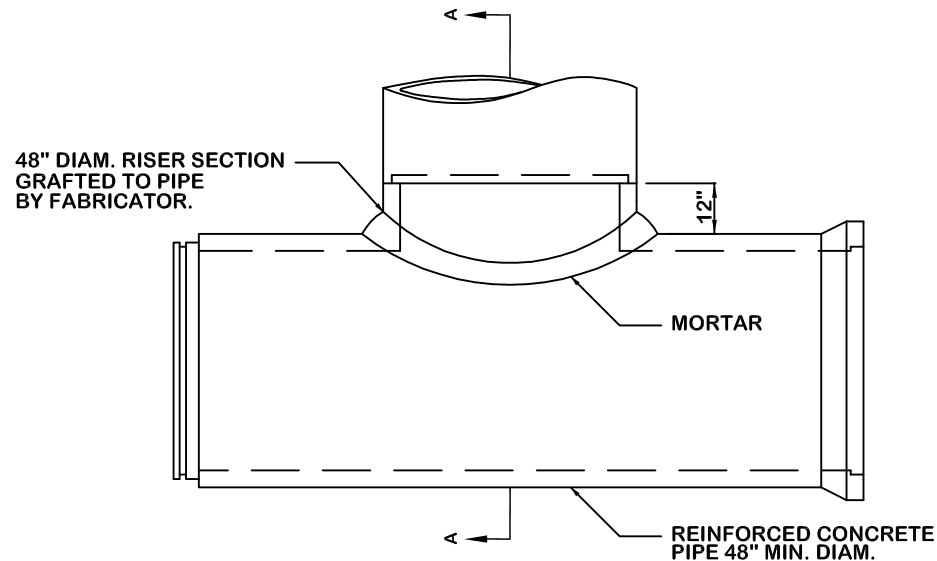
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CITY ENGINEER DATE

**THRU-CURB INLET FRAME  
& GRATE WITH VERTICAL  
CURB INSTALLATION**

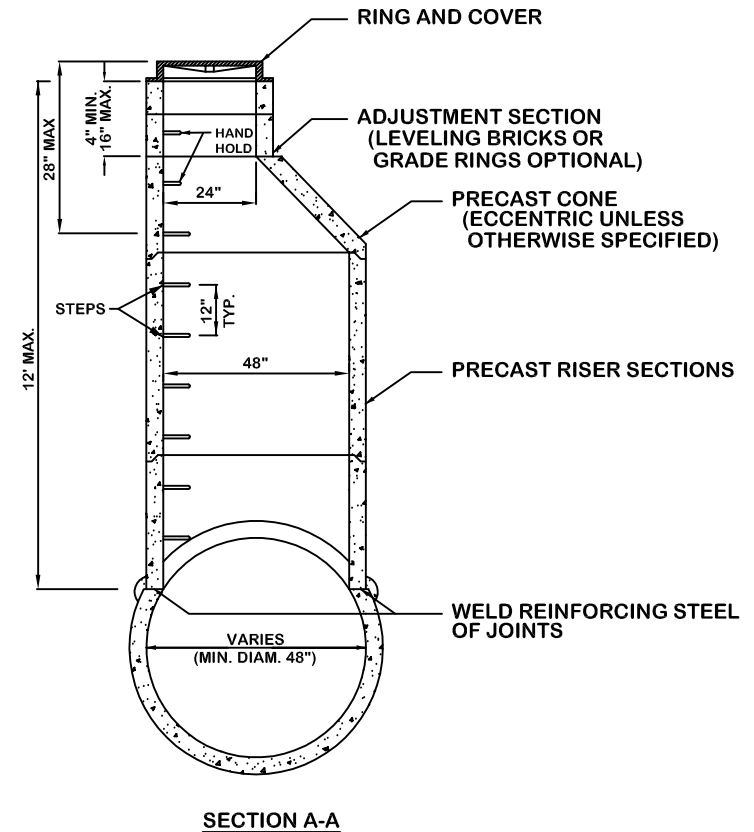
STANDARD PLAN NO. SW-008

**NOTES:**

1. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M199 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE WSDOT/APWA STANDARD SPECIFICATIONS.
2. HANDHOLDS IN ADJUSTMENT SECTION SHALL HAVE 3" MIN. CLEARANCE. STEPS IN MANHOLE SHALL HAVE 6" MIN. CLEARANCE. SEE DWG. NO. SW-010, "MANHOLE DETAILS."
3. MANHOLE RINGS AND COVERS SHALL BE IN ACCORDANCE WITH STD. PLANS AND MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR-F-621D. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
4. ALL PRECAST CONCRETE SHALL BE CLASS 4000.
5. FOR DETAILS SHOWING GRADE RING, LADDER, STEPS, HANDHOLDS, AND TOP SLABS, SEE DWG. NO. SW-010, "MANHOLE DETAILS".
6. NOT FOR USE IN TRAFFIC BEARING AREAS.



ELEVATION



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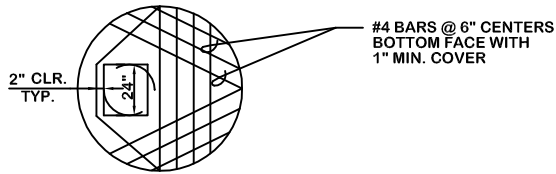
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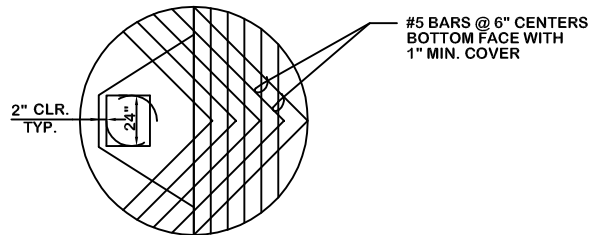
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**MANHOLE TYPE 4**

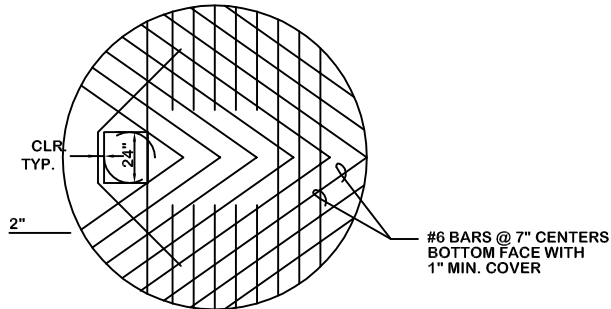
STANDARD PLAN NO. SW-009



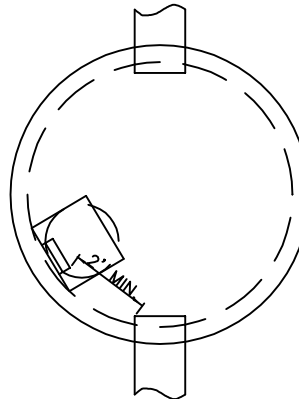
20"  
6"  
**48", 54" & 60" TOP SLAB**



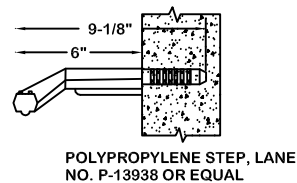
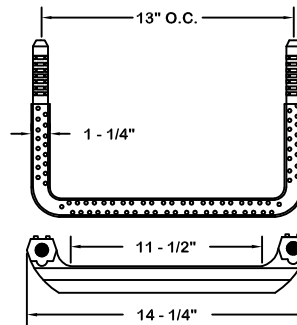
20"  
6"  
**72" TOP SLAB**



20"  
12"  
**96" TOP SLAB**



**TYPICAL ORIENTATION  
FOR ACCESS AND STEPS**

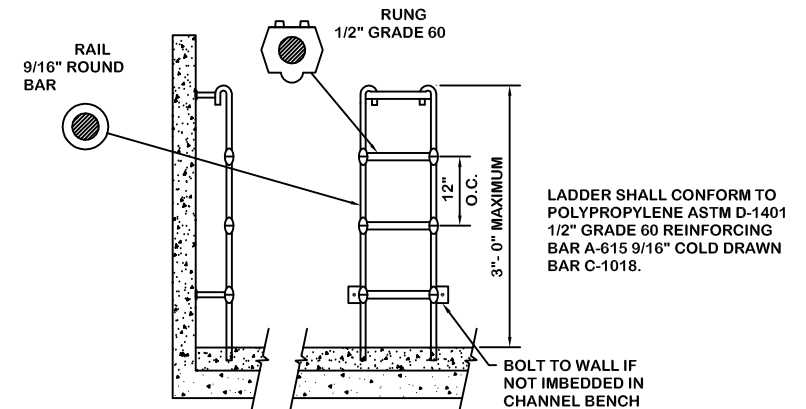


**POLYPROPYLENE STEP, LANE  
NO. P-13938 OR EQUAL**

**POLYPROPYLENE MANHOLE STEPS**

**NOTES:**

1. PROPRIETARY CATCH BASIN HANDHOLDS AND STEPS ARE ACCEPTABLE, PROVIDED THAT THEY CONFORM TO SEC. R, ASTM C478, AASHTO M-199 AND MEET ALL WISHA REQUIREMENTS.
2. CATCH BASIN STEP/HANDHOLD LEGS SHALL BE PARALLEL OR APPROXIMATELY RADIAL AT THE OPTION OF THE MANUFACTURER, EXCEPT THAT ALL STEPS IN ANY CATCH BASIN SHALL BE SIMILAR. PENETRATION OF OUTER WALL BY A LEG IS PROHIBITED.
3. SLAB OPENING MAY BE 24" X 20" OR 24" DIAM.
4. AS AN ACCEPTABLE ALTERNATIVE TO REBAR, WELDED WIRE FABRIC HAVING A MIN. AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY TO ASTM A497.
5. LADDERS OR STEPS SHALL EXTEND TO WITHIN 16" OF BOTTOM OF CATCH BASIN.
6. HANGING LADDERS SHALL BE PERMANENTLY FASTENED AT TOP BY HANGING ON STEP AND BY BOLTING OR EMBEDDING IN CONCRETE. EACH SHALL BE EMBEDDED AT BOTTOM IN BASE.
7. ADDITIONAL SAFETY FEATURES MAY BE REQUIRED IN VERY DEEP OR UNUSUAL STRUCTURES.



**POLYPROPYLENE LADDER**

LADDER SHALL CONFORM TO POLYPROPYLENE ASTM D-1401 1/2" GRADE 60 REINFORCING BAR A-615 9/16" COLD DRAWN BAR C-1018.



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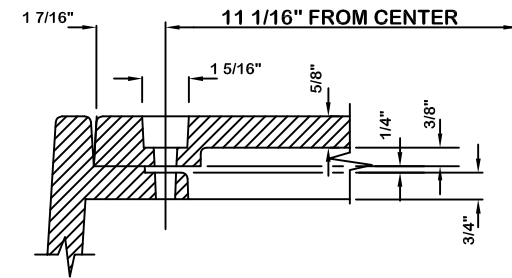
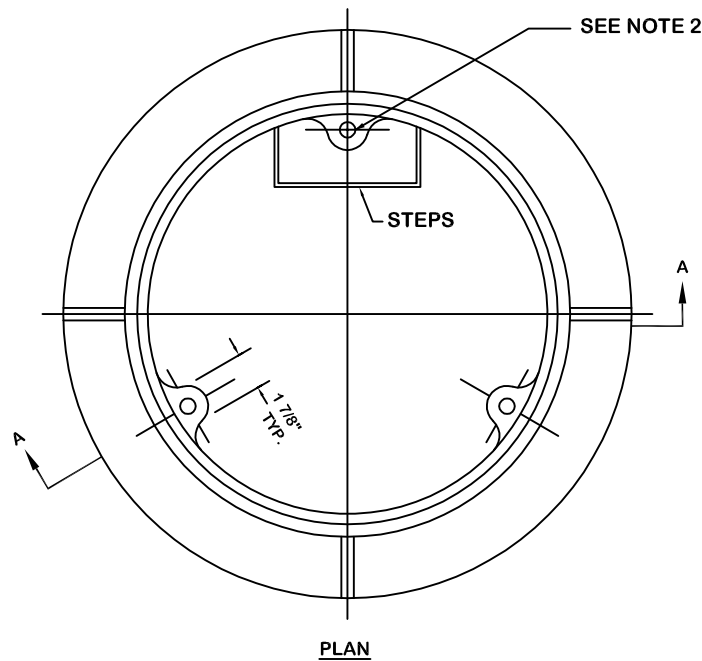
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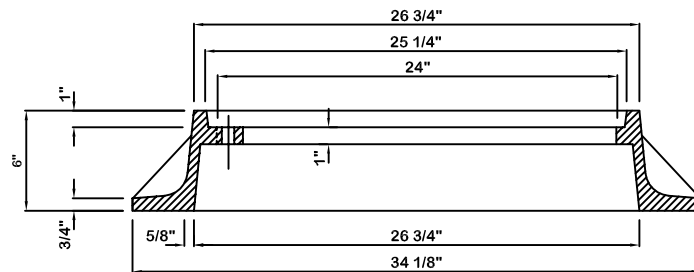
**CATCH BASIN &  
MANHOLE DETAILS**

STANDARD PLAN NO. SW-010





**BOLT-DOWN DETAIL**



**SECTION A-A**

**NOTES:**

1. MATERIAL IS CAST IRON ASTM A48 CLASS 30.
2. DRILL AND TAP THREE 5/8"-11 NC HOLES THROUGH FRAME AT 120° AND 11 1/16" RADIUS.
3. FOR INSTALLATION SEE SW-004 OR SW-009



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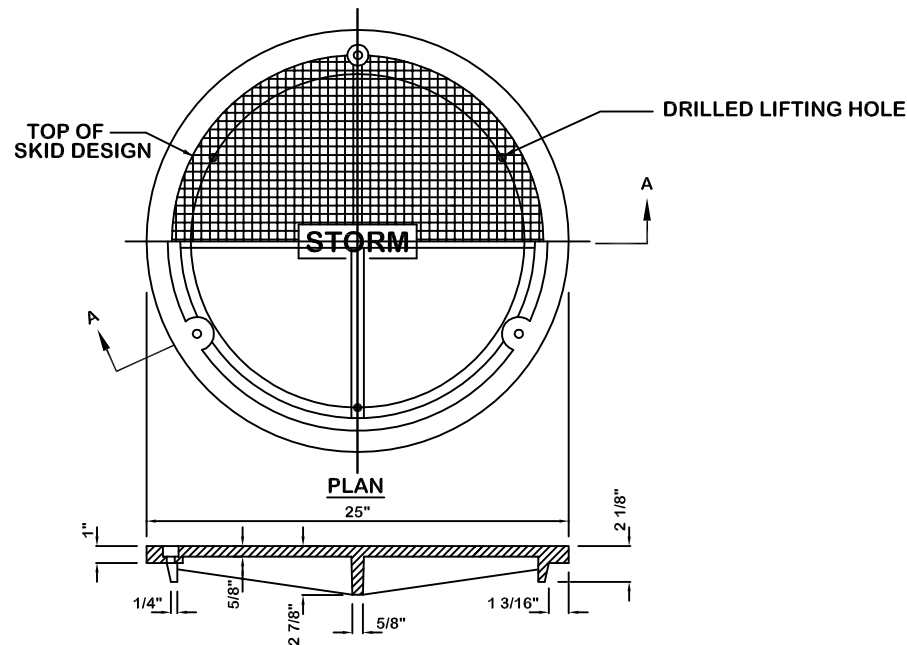
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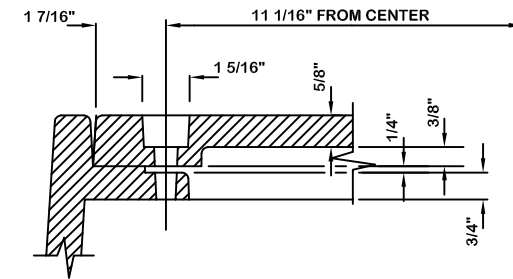
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**LOCKING MANHOLE  
FRAME DETAIL**

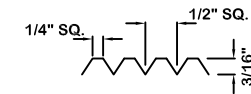
STANDARD PLAN NO. SW-011



**SECTION A-A**



**BOLT-DOWN DETAIL**



**COVER SKID DESIGN DETAIL**

**NOTES:**

1. USE WITH THREE LOCKING BOLTS 5/8"-11 NC STAINLESS TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) CAP SCREWS 2" LONG. DRILL HOLES SPACED 120° AT 11 1/16" RADIUS.
2. MATERIAL IS DUCTILE IRON ASTM A536 GRADE 80-55-06
3. DRILL THREE 1 INCH HOLES SPACED AT 120 AND 9 1/2" RADIUS.
4. FOR INSTALLATION SEE SW-004 & SW-009



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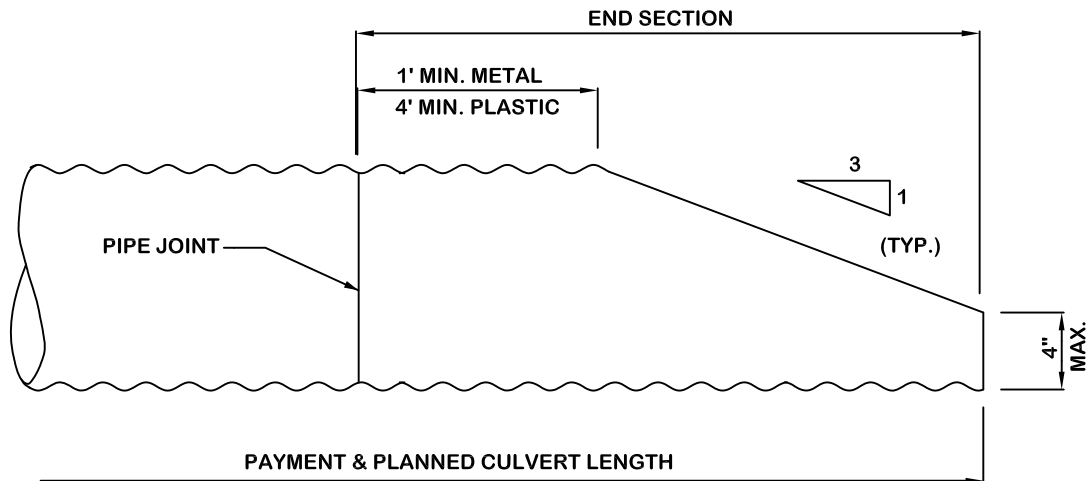
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**LOCKING MANHOLE  
COVER DETAIL**

**STANDARD PLAN NO. SW-012**



### D.I. & PLASTIC PIPE

**NOTE:**  
 SIDE SLOPE SHALL BE WARPED TO MATCH THE BEVELED PIPE  
 END. WHEN CULVERT IS ON SKEW, BEVELED END SHALL BE  
 ROTATED TO CONFORM TO SLOPE. IF SLOPE DIFFERS FROM  
 3:1, PIPE SHALL BE BEVELED TO MATCH SLOPE.



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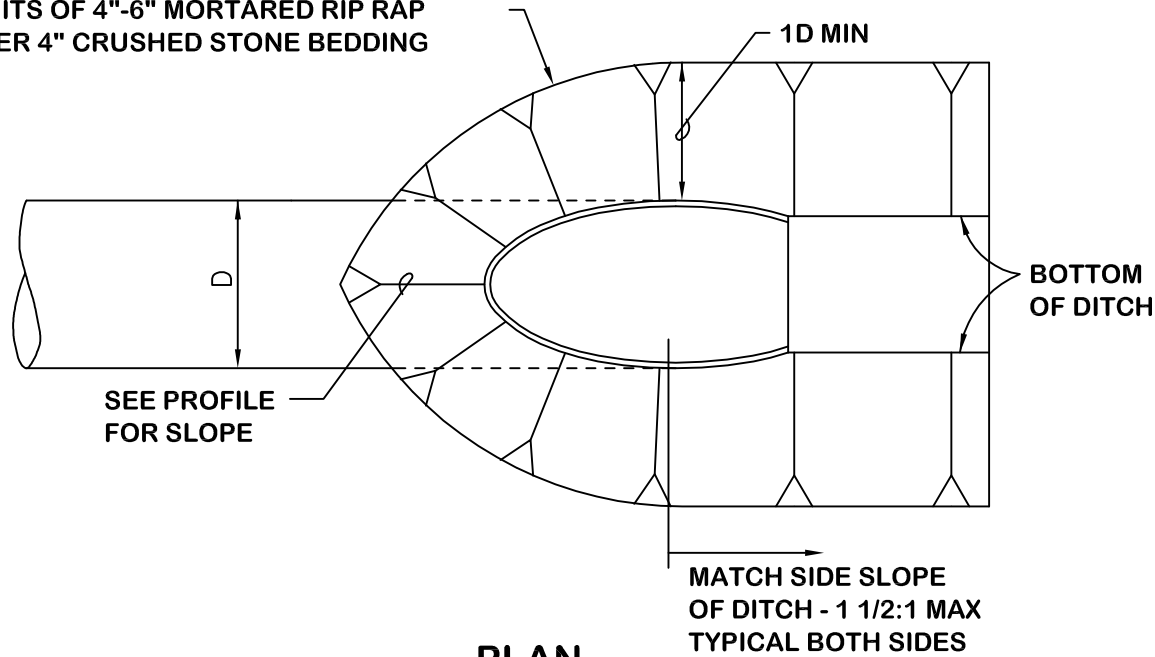
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**BEVELED END PIPE  
SECTION**

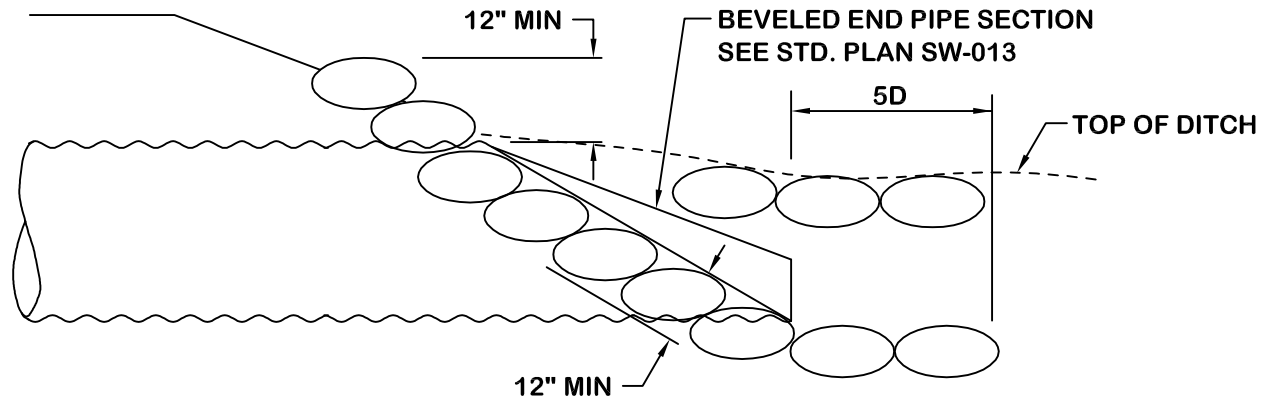
STANDARD PLAN NO. SW-013

LIMITS OF 4"-6" MORTARED RIP RAP  
OVER 4" CRUSHED STONE BEDDING



NOTE:  
'D' = PIPE DIAMETER

**PLAN**



**PROFILE**



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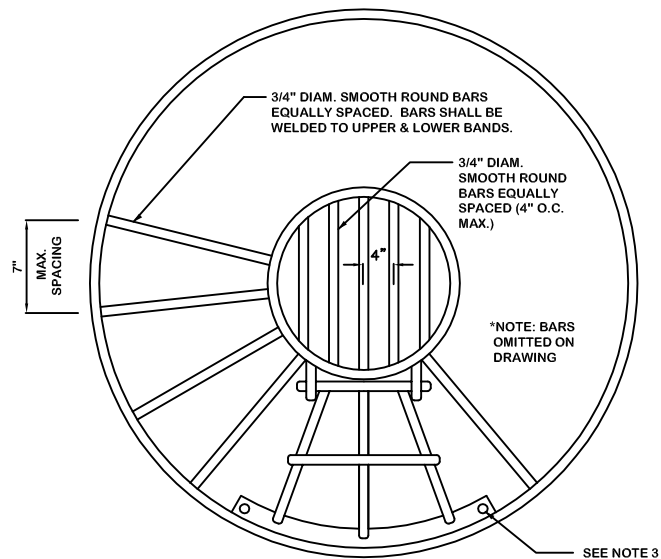
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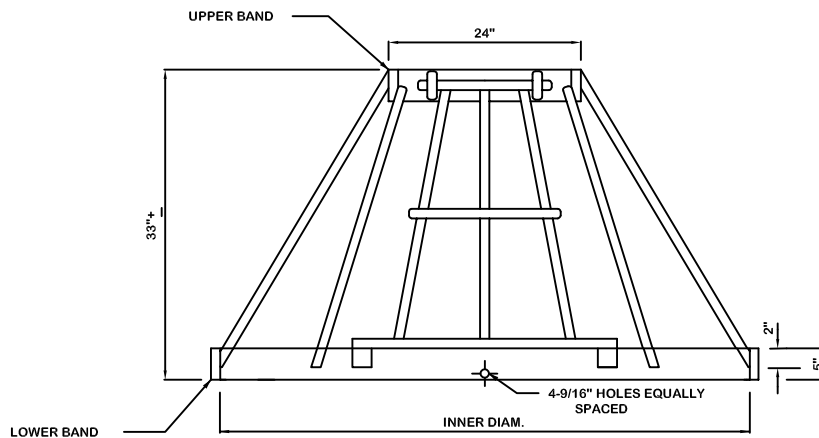
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ROCK HEADWALL  
DETAIL

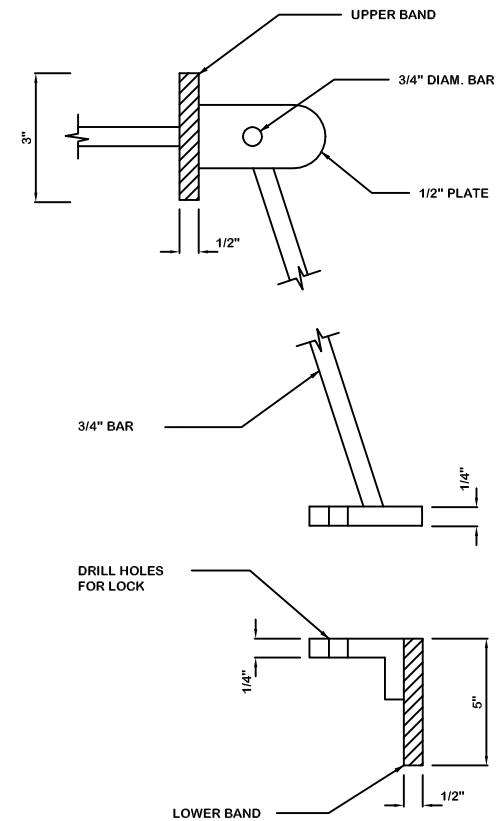
STANDARD PLAN NO. SW-014



**PLAN**



**ELEVATION**



**ENTRY GATE DETAIL**

**NOTES:**

1. ALL STEEL IN PLATES, BARS AND BANDS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36.
2. DEBRIS CAGE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123 (AASHTO M111).
3. PADLOCK HATCH.

CB	INNER DIAM.
48"	58"
54"	65"
60"	72"
72"	86"
96"	114"



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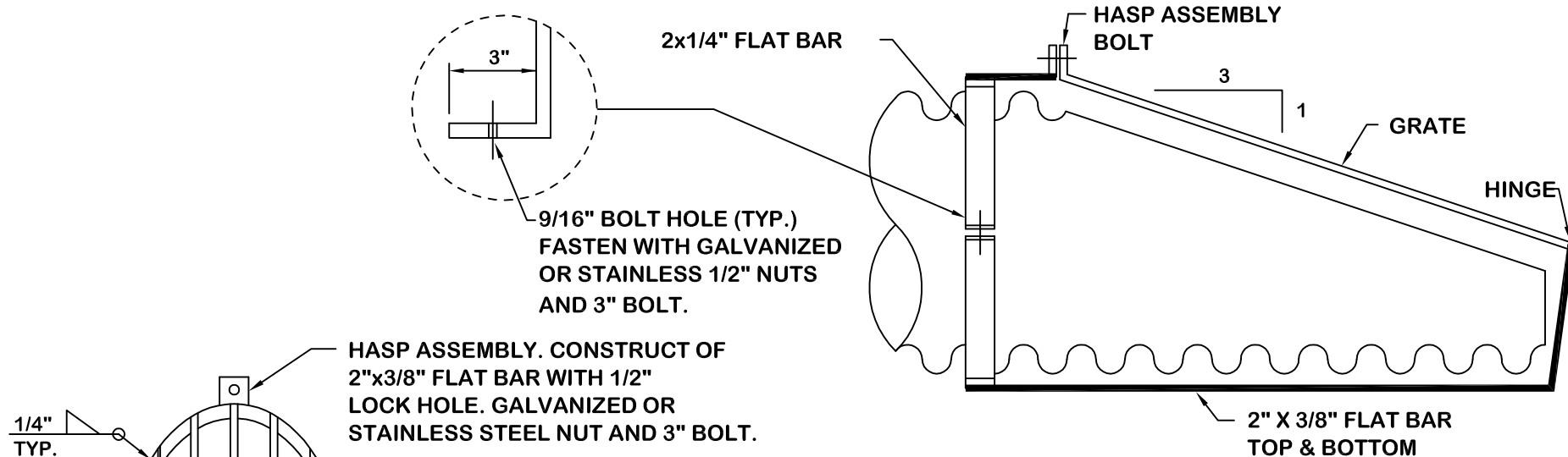
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**DEBRIS CAGE**

**STANDARD PLAN NO. SW-015**



## LONGITUDINAL PROFILE

### NOTES:

INSTALL AT INLETS AND OUTLETS OF ALL STORM  
PIPE 18 INCHES AND GREATER AND AT INLETS OF  
ALL STORM PIPE SMALLER THAN 18 INCHES.

CONTRACTOR TO PROVIDE SHOP DRAWINGS PRIOR  
TO FABRICATION. SHOP FABRICATE.

CONSTRUCTION SHALL BE ALL STEEL. HOT DIP  
GALVANIZE AFTER FABRICATION.

## END VIEW



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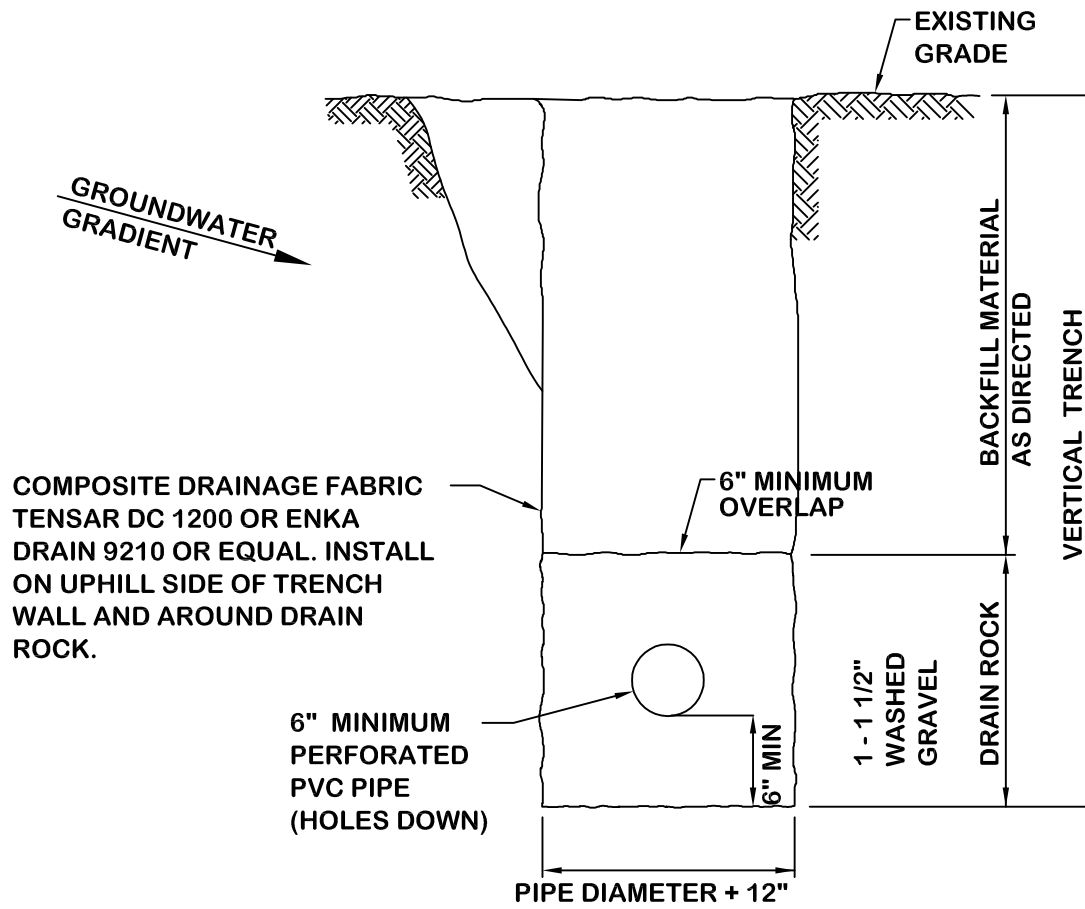
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**TRASH RACK**

STANDARD PLAN NO. SW-016



**NOTES:**

1. CRIBBING & SHEETING MAY BE REQUIRED DEPENDING ON DEPTH AND SOIL TYPE OF TRENCH, PER WASHINGTON INDUSTRIAL SAFETY & HEALTH ACT.
2. SITE SAFETY IS THE OWNER'S RESPONSIBILITY.



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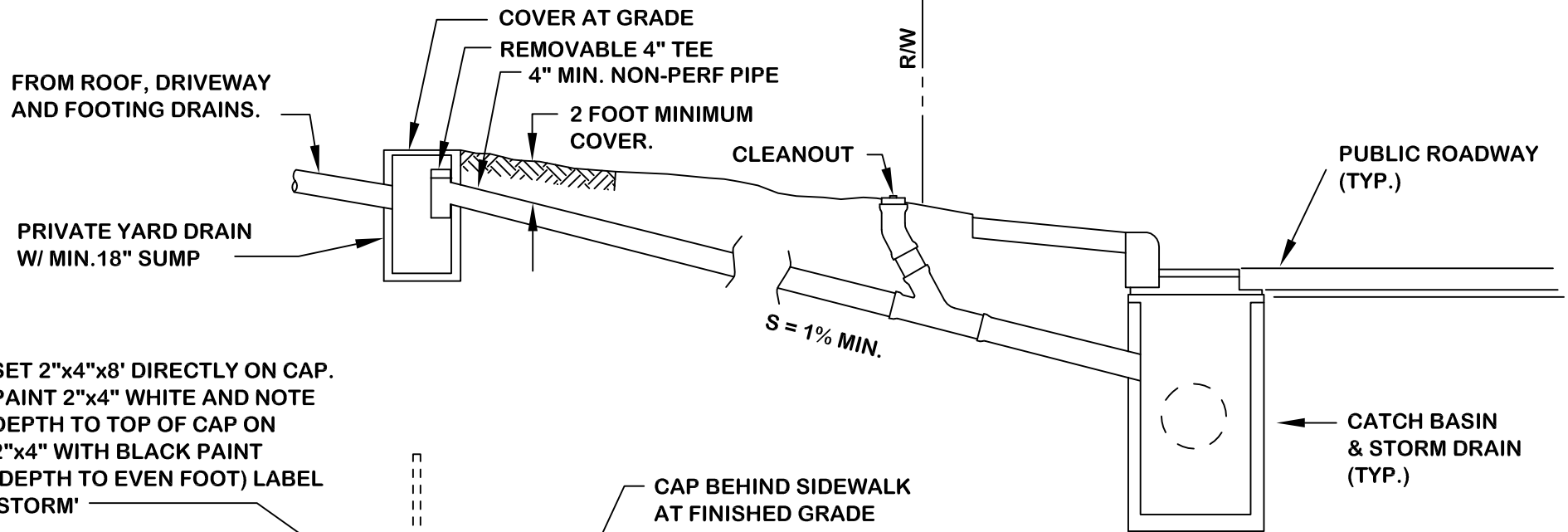
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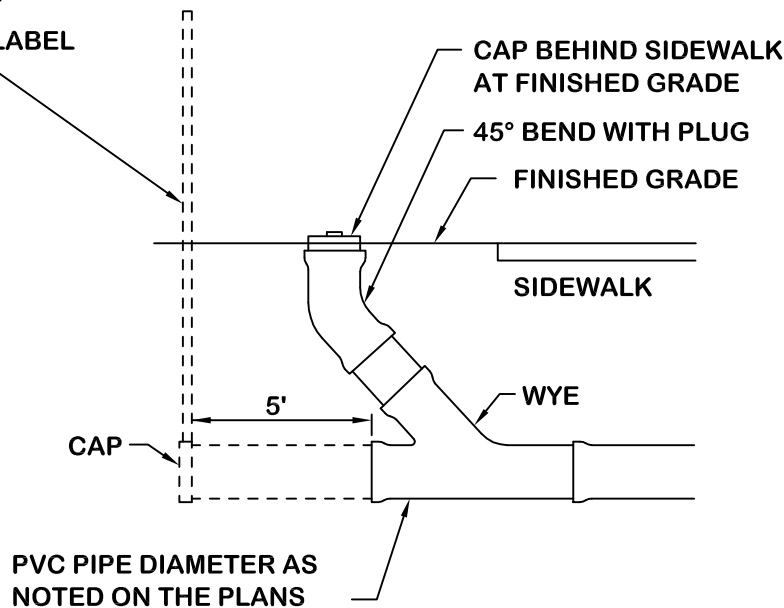
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**FRENCH DRAIN**

STANDARD PLAN NO. SW-017



SET 2"x4"x8' DIRECTLY ON CAP.  
 PAINT 2"x4" WHITE AND NOTE  
 DEPTH TO TOP OF CAP ON  
 2"x4" WITH BLACK PAINT  
 (DEPTH TO EVEN FOOT) LABEL  
 'STORM'



ROOF DRAIN CLEANOUT DETAIL

NOTE:  
 IF CLEANOUT FALLS IN DRIVEWAY USE  
 ROAD WEIGHT BEARING CAP AND COVER



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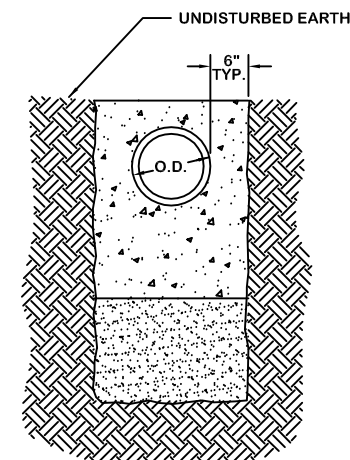
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INDIVIDUAL LOT & ROOF  
DRAIN PLAN DETAILS

STANDARD PLAN NO. SW-018





1. "D", THE INSIDE DIAM. OF THE INLET PIPE, SHALL BE 24" OR LESS. FOR LARGER VALUES OF "D", USE AN APPROVED STRUCTURE.
2. IN NO CASE SHALL THE OUTSIDE DIAM. OF THE INLET PIPE EXCEED ONE-HALF THE INSIDE DIAM. OF THE MAIN STORM SEWER.
3.  $\phi$  OF INLET PIPE SHALL BE ON RADIUS OF MAIN STORM DRAIN.
4. THE MIN. OPENING INTO THE EXISTING STORM DRAIN SHALL BE THE OUTSIDE DIAM. OF THE INLET PIPE PLUS 1 IN.
5. IF  $\angle$  IS GREATER THAN 45° FIELD TAPPING IS NOT ALLOWED.

RESERVED FOR FUTURE PLANS



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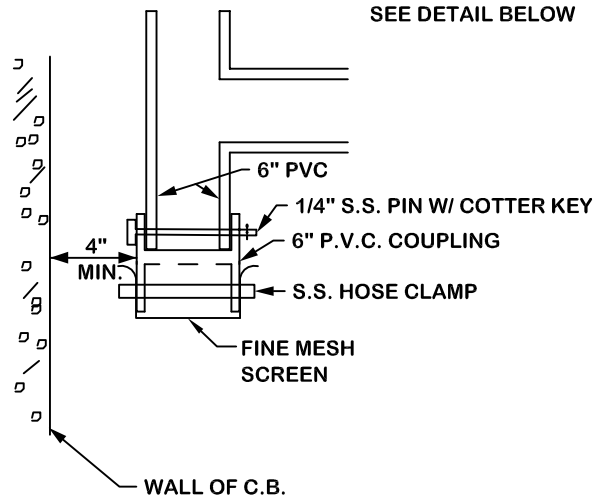
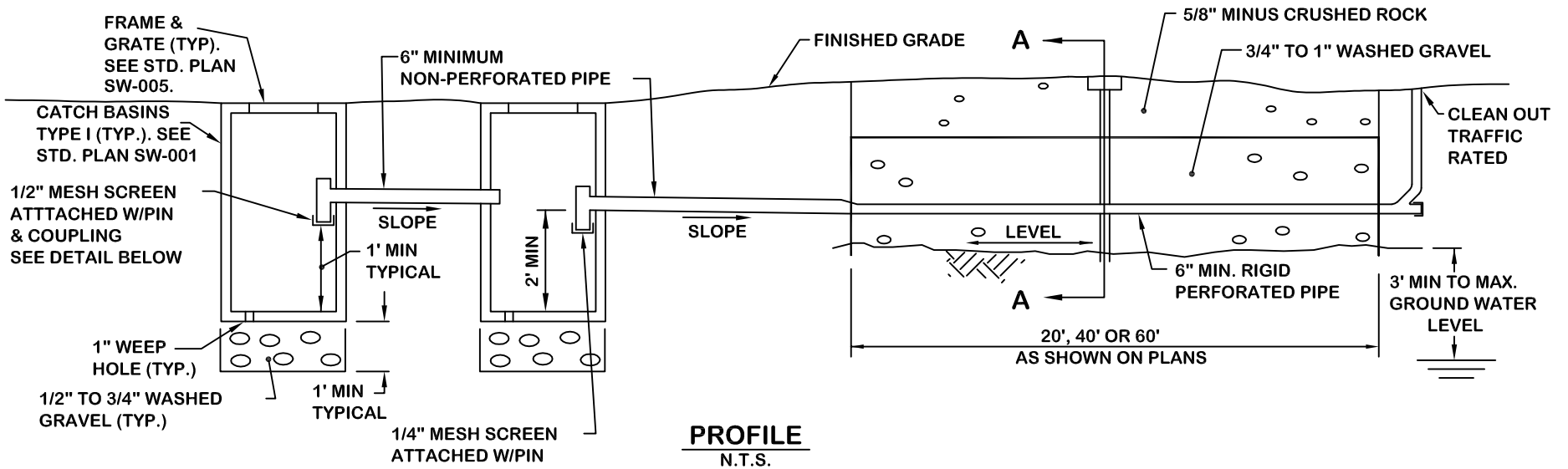
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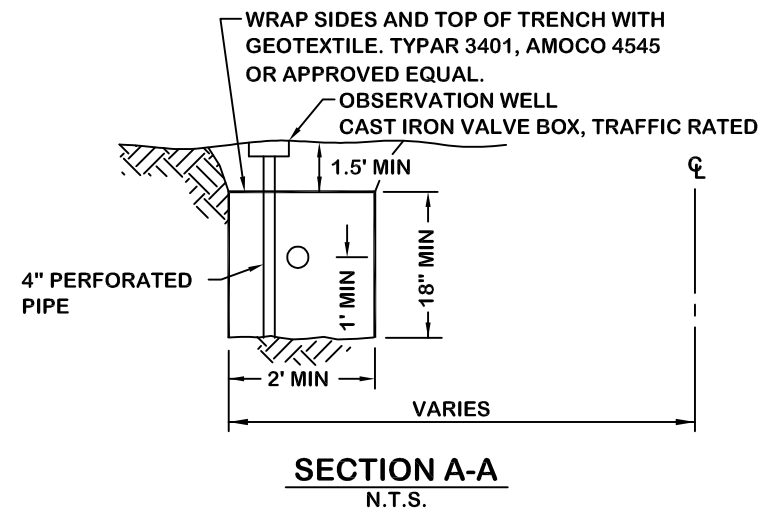
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PLANS**

STANDARD PLAN NO.

SW-020-030



**SCREEN CONNECTION DETAIL**  
N.T.S.



**SECTION A-A**  
N.T.S.



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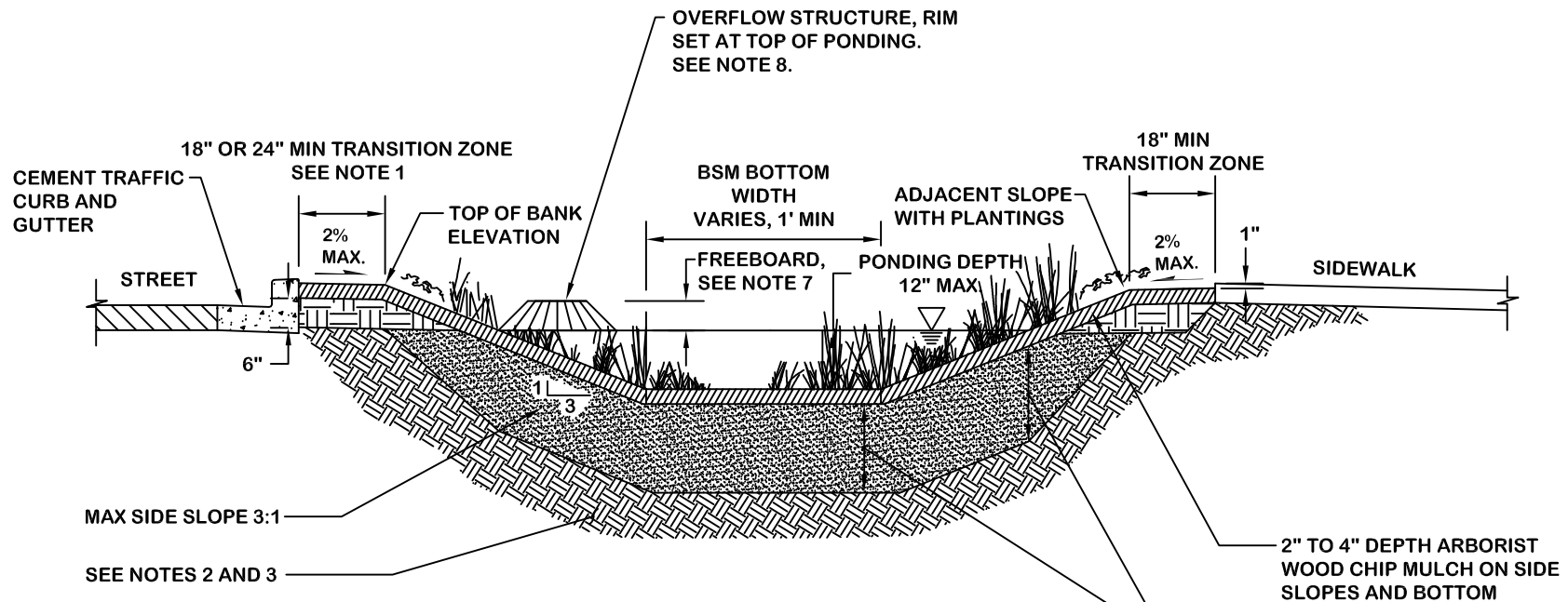
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**INFILTRATION TRENCH  
DETAIL**

STANDARD PLAN NO. SW-031



#### NOTES:

1. 24-INCH MINIMUM TRANSITION ZONE REQUIRED WHERE ADJACENT TO PARKING.
2. AVOID COMPACTION OF EXISTING SUBGRADE BELOW FACILITY.
3. SCARIFY SUBGRADE 3-INCHES MINIMUM BEFORE BIORETENTION SOIL MEDIA INSTALLATION.
4. PLANTINGS PER STD. PLAN SW-047 AND PLANS.
5. PLANTINGS ADJACENT TO PARKING SHALL BE SELECTED AND SPACED TO ALLOW PEDESTRIAN ACCESS TO VEHICLES.
6. SIZING AND DESIGN OF FACILITY PER ECOLOGY MANUAL BMP T7.30.
7. FREEBOARD DEPTH VARIES (2-INCHES OR 6-INCHES) DEPENDING UPON SIZE OF DRAINAGE AREA. FOR FREEBOARD, PONDING AND OVERFLOW DEPTH, SEE ECOLOGY MANUAL BMP T7.30.
8. OVERFLOW TYPE DEPENDS ON PROJECT DESIGN. ALTERNATE OVERFLOW TYPE MAY BE ALLOWED, AS NOTED ON APPROVED PLAN SET.
9. SIDE SLOPES STEEPER THAN 3:1 MAY BE APPROVED IF OVERALL FACILITY DEPTH IS LESS THAN 3 FEET FROM TOP OF MULCH TO TOP OF FACILITY.
10. INLET ELEVATION TO BE ABOVE FREEBOARD ELEVATION.
11. COMPACT BSM TO 85% PER ASTM 1577.



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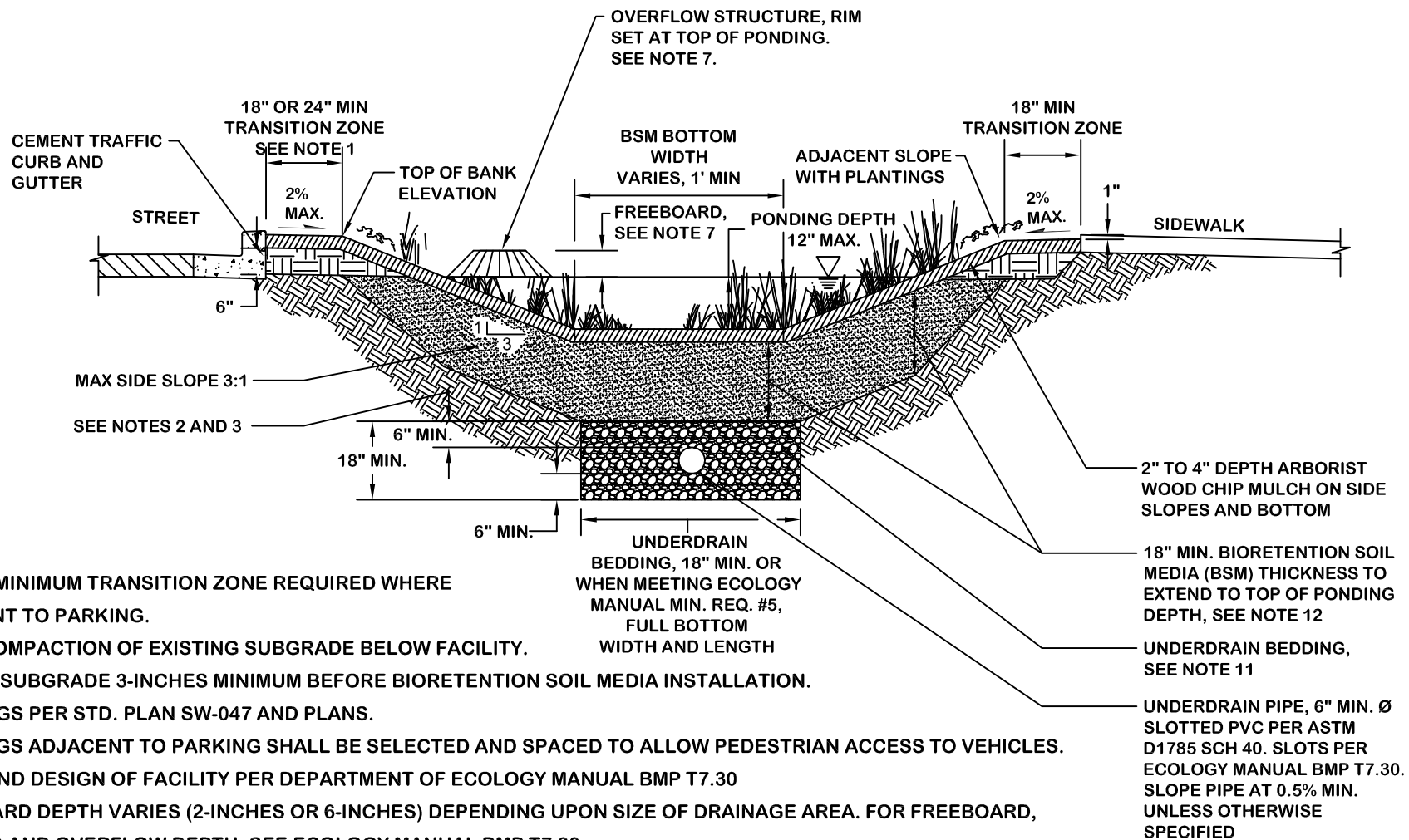
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**BIORETENTION**

STANDARD PLAN NO. SW-032



#### NOTES:

- 24-INCH MINIMUM TRANSITION ZONE REQUIRED WHERE ADJACENT TO PARKING.
- AVOID COMPACTION OF EXISTING SUBGRADE BELOW FACILITY.
- SCARIFY SUBGRADE 3-INCHES MINIMUM BEFORE BIORETENTION SOIL MEDIA INSTALLATION.
- PLANTINGS PER STD. PLAN SW-047 AND PLANS.
- PLANTINGS ADJACENT TO PARKING SHALL BE SELECTED AND SPACED TO ALLOW PEDESTRIAN ACCESS TO VEHICLES.
- SIZING AND DESIGN OF FACILITY PER DEPARTMENT OF ECOLOGY MANUAL BMP T7.30
- FREEBOARD DEPTH VARIES (2-INCHES OR 6-INCHES) DEPENDING UPON SIZE OF DRAINAGE AREA. FOR FREEBOARD, PONDING AND OVERFLOW DEPTH, SEE ECOLOGY MANUAL BMP T7.30.
- OVERFLOW TYPE DEPENDS ON PROJECT DESIGN. ALTERNATE OVERFLOW TYPE MAY BE ALLOWED, AS SHOWN ON APPROVED PLAN SET.
- SIDE SLOPES STEEPER THAN 3:1 MAY BE APPROVED IF OVERALL FACILITY DEPTH IS LESS THAN 3 FEET FROM TOP OF MULCH TO TOP OF FACILITY.
- INLET ELEVATION TO BE ABOVE FREEBOARD ELEVATION.
- UNDERDRAIN BEDDING PER WSDOT 9-03.12(4) GRAVEL BACKFILL FOR DRAINS.
- COMPACT BSM TO 85% PER ASTM 1577.



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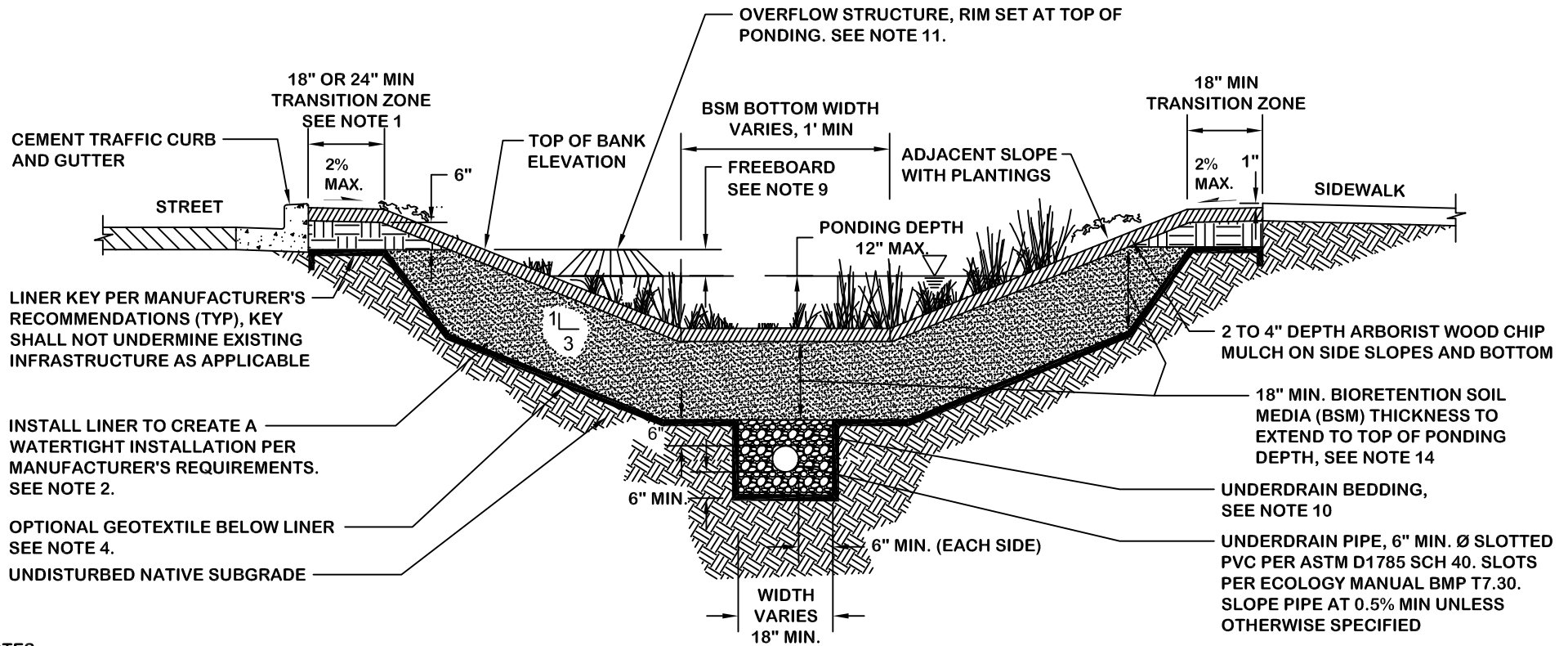
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**BIORETENTION WITH  
UNDERDRAIN**

STANDARD PLAN NO. SW-033



**NOTES:**

- 24-INCH MINIMUM TRANSITION ZONE REQUIRED WHERE ADJACENT TO PARKING.
- GEOMEMBRANE LINER PER ECOLOGY MANUAL BMP T7.30 AND SHALL BE PVC WITH A MINIMUM THICKNESS OF 30 MILS AND IN ACCORDANCE WITH ASTM D7176. SEAMS SHALL BE WATERPROOF. LINER TO CREATE A WATERTIGHT INSTALLATION TO TOP OF FREEBOARD. PREPARE SUBGRADE FOR LINER PER ENGINEER. LINER SPECIFICATION MAY VARY BASED ON SITE CONDITIONS.
- PENETRATIONS THROUGH FACILITY LINER SHALL BE WATERTIGHT AND SHALL PREVENT PREFERENTIAL FLOW INTO UTILITY TRENCHES (E.G. WATER STOP, TRENCH BLOCK, OR TRENCH COLLAR), AS APPROPRIATE.
- PROVIDE GEOTEXTILE UNDER PVC LINER TO PROTECT LINER FROM SHARP ROCKS IF RECOMMENDED BY LINER MANUFACTURER. GEOTEXTILE PER LINER MANUFACTURER.
- LINER SECURED AT TOP AND/OR KEYED PER MANUFACTURER. ALL SEAMS TO BE SEALED AND WATERPROOF PER MANUFACTURER AND ALL PENETRATIONS TO BE BOOTED. LINER SHALL BE INSTALLED AND SEALED TO CREATE A WATERTIGHT INSTALLATION TO TOP OF FREEBOARD.
- PLANTINGS PER STD. PLAN SW-047 AND PLANS.
- PLANTINGS ADJACENT TO PARKING SHALL BE SELECTED AND SPACED TO ALLOW PEDESTRIAN ACCESS TO VEHICLES.
- SIZING AND DESIGN OF FACILITY PER ECOLOGY MANUAL BMP T7.30.
- FREEBOARD DEPTH VARIES (2-INCHES OR 6-INCHES) DEPENDING UPON SIZE OF DRAINAGE AREA. FOR FREEBOARD, PONDING AND OVERFLOW DEPTH, SEE ECOLOGY MANUAL BMP T7.30.
- UNDERDRAIN BEDDING PER WSDOT 9-03.12(4) GRAVEL BACKFILL FOR DRAINS.
- OVERFLOW TYPE DEPENDS ON PROJECT DESIGN. ALTERNATE OVERFLOW TYPE MAY BE ALLOWED. AS SHOWN ON APPROVED PLAN SET.
- SIDE SLOPES STEEPER THAN 3:1 MAY BE APPROVED IF OVERALL FACILITY DEPTH IS LESS THAN 3 FEET FROM TOP OF MULCH TO TOP OF FACILITY.
- INLET ELEVATION TO BE ABOVE FREEBOARD ELEVATION.
- COMPACT BSM TO 85% PER ASTM 1577.



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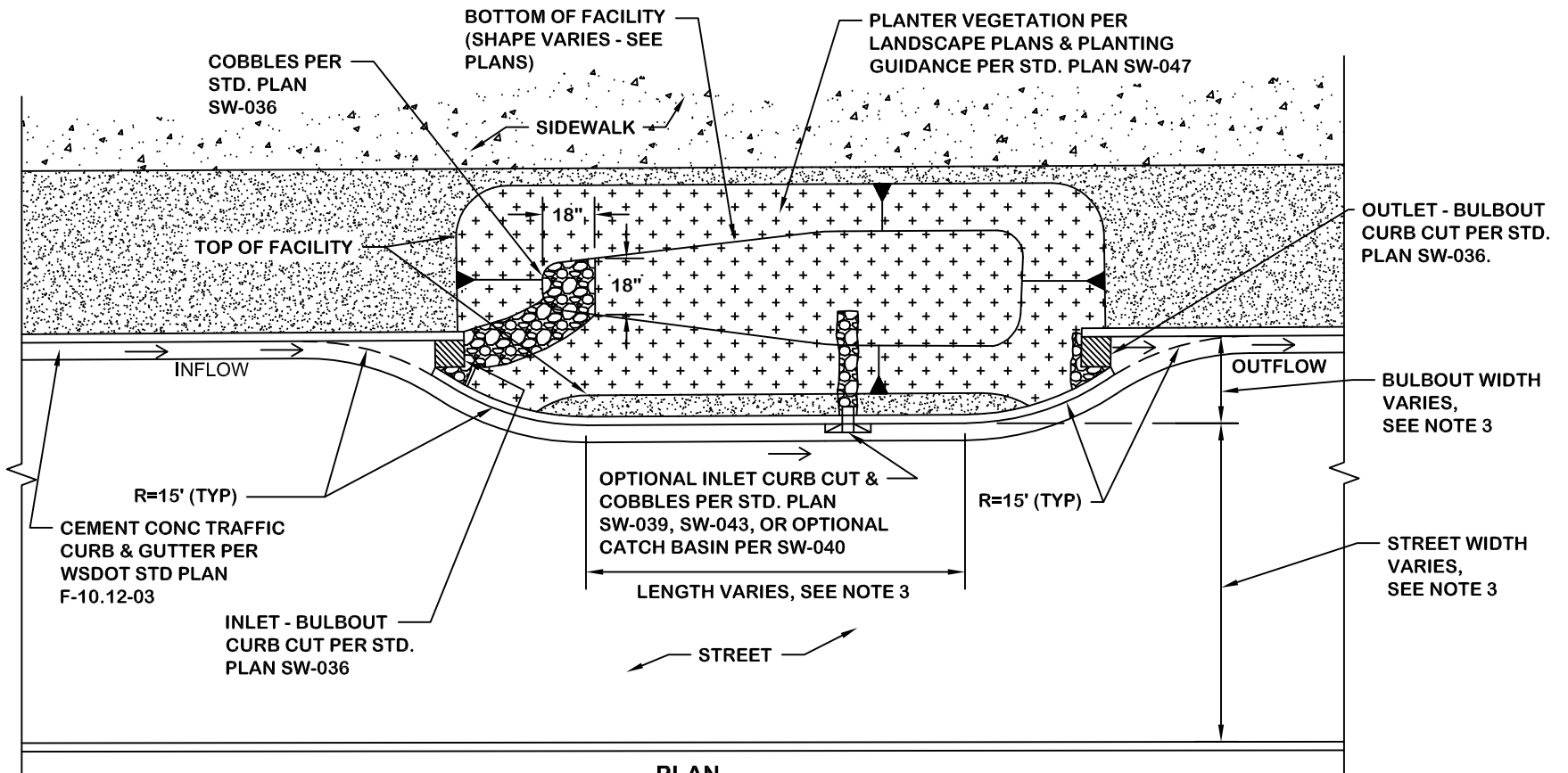
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**BIORETENTION WITH  
LINER & UNDERDRAIN**

STANDARD PLAN NO. SW-034





**PLAN**  
NTS

**NOTES:**

1. EXISTING AND PROPOSED UTILITY LINES SHALL BE LOCATED OUT OF FACILITY UNLESS OTHERWISE APPROVED BY ENGINEER.
2. ABANDONED UTILITIES WITHIN FOOTPRINT OF FACILITY SHALL BE REMOVED AS NEEDED. COORDINATE WITH UTILITY PROVIDER AND ENGINEER.
3. CURB BULBOUT WIDTH AND STREET WIDTH VARIES WITH STREET TYPE (E.G. ARTERIAL VS. LOCAL). MAXIMUM WIDTHS AND LENGTHS TO BE DETERMINED BY CITY BASED ON STREET.
4. SEE STANDARD PLANS SW-032, SW-033, SW-034 FOR SECTION.
5. IF SHOWN ON PLANS BOTH CURB CUTS MAY BE INLETS IF ALTERNATE OVERFLOW IS PROVIDED.



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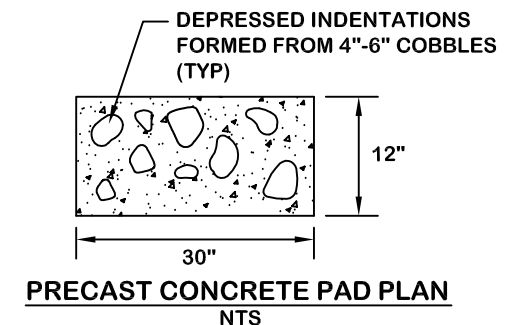
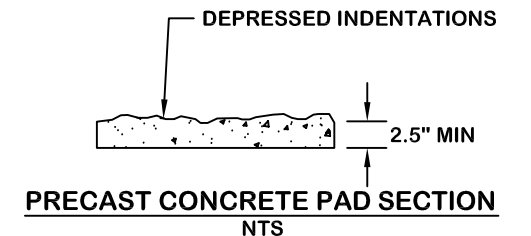
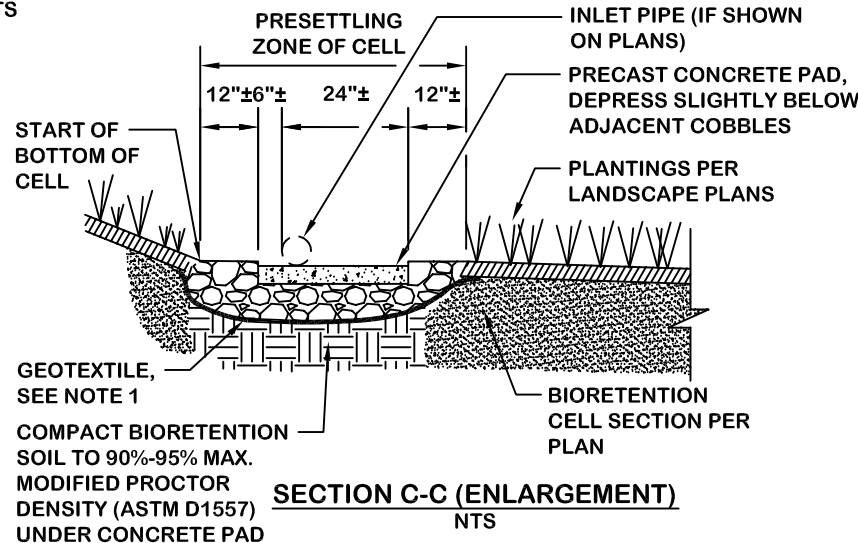
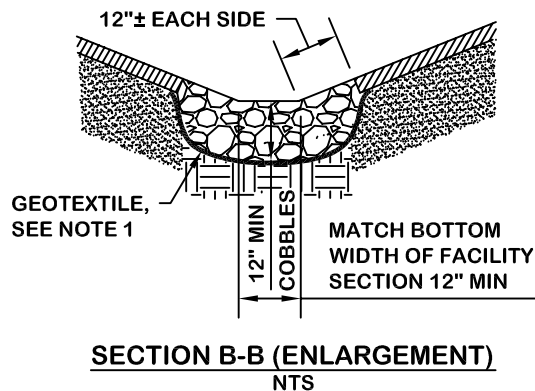
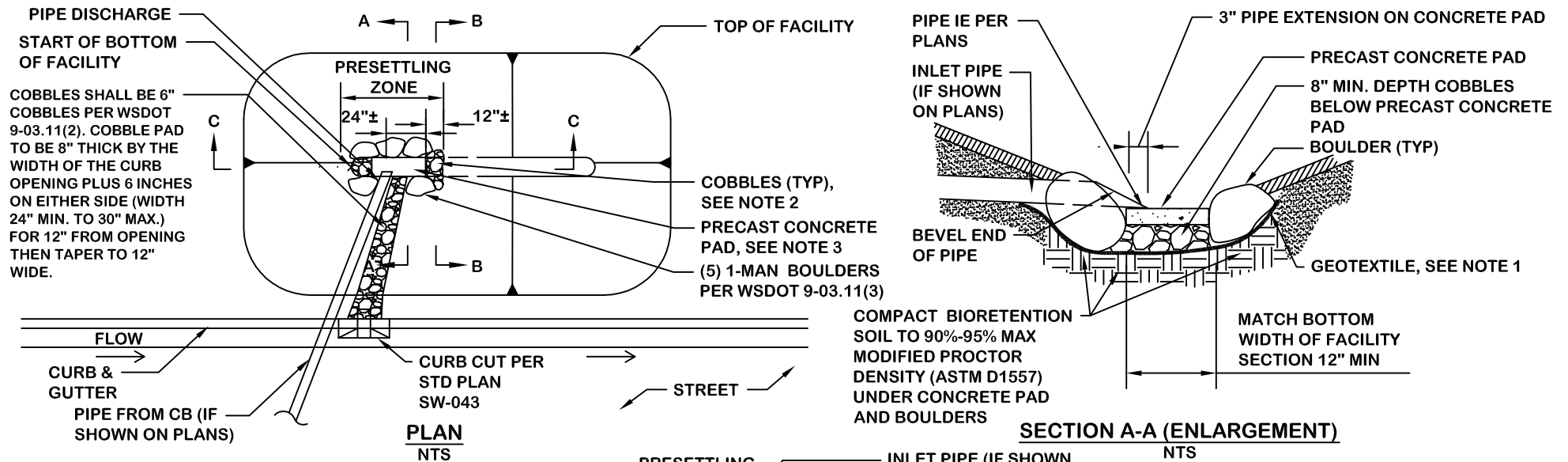
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**CURB BULBOUT  
WITH SLOPED SIDES  
BIORETENTION**

STANDARD PLAN NO. SW-035

SW-036





**NOTES:**

1. GEOTEXTILE SHALL BE NON-WOVEN, MODERATE SURVIVABILITY PER WSDOT 9-33.2(1), TABLES 1 AND 2.
2. COBBLES SHALL BE 6" COBBLES PER WSDOT 9-03.11(2).
3. PURCHASED CONCRETE PAD WITH DIMENSIONS OF SIMILAR SIZE MAY BE USED.



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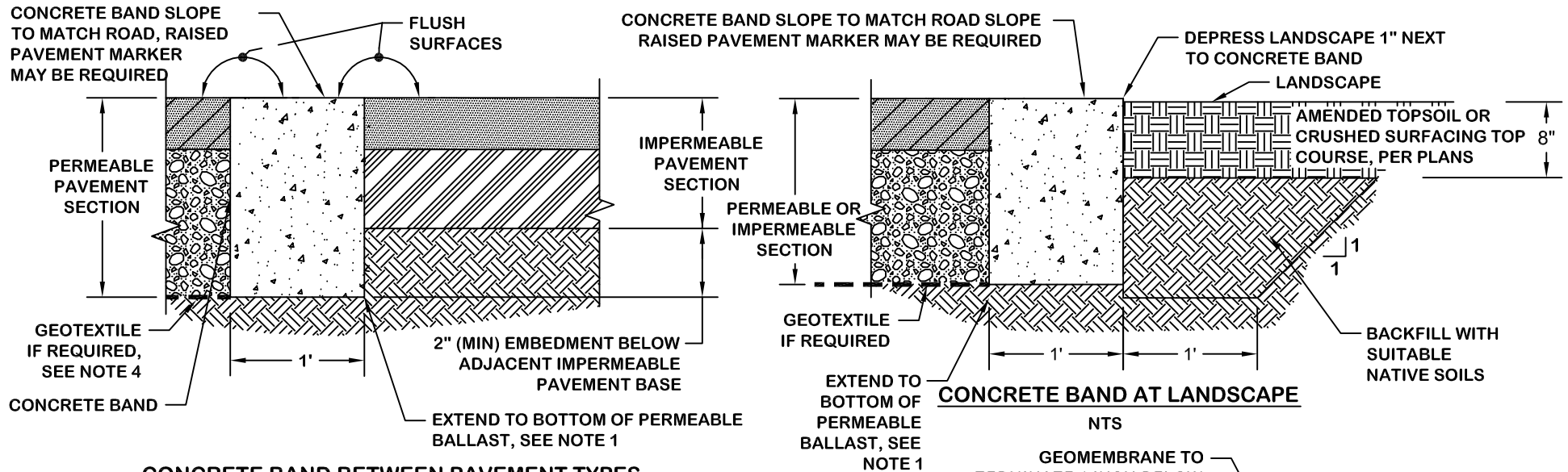
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**PRESETTLING CELL WITH  
PIPE OR CURB CUT**

STANDARD PLAN NO.

SW-037



### CONCRETE BAND BETWEEN PAVEMENT TYPES

#### NOTES:

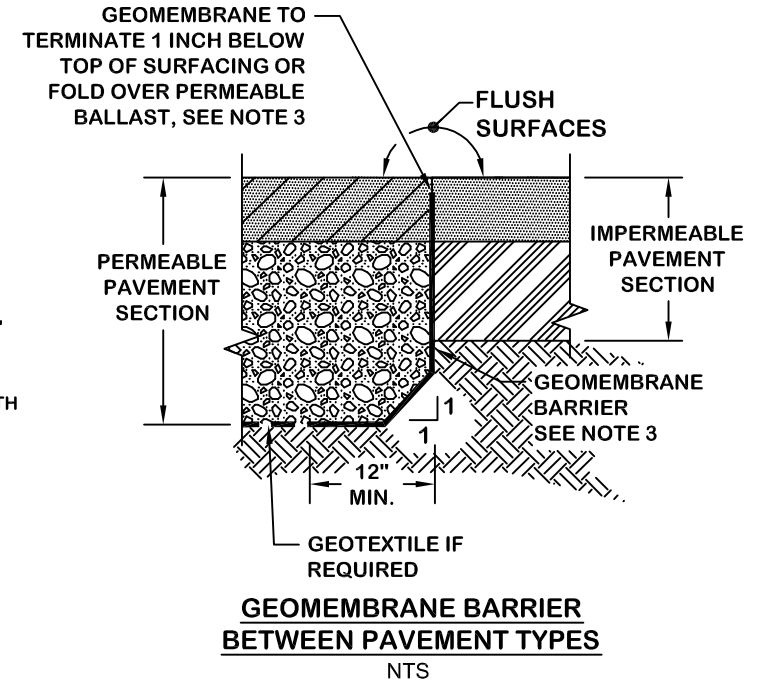
1. WHEN USED AS A VISUAL SEPARATION OR TO STABILIZE SURFACING MATERIAL, EDGE TREATMENT IS NOT REQUIRED TO EXTEND MORE THAN 12 INCHES BELOW TOP OF WEARING COURSE UNLESS THE PERMEABLE PAVEMENT SECTION IS ADJACENT TO A STANDARD PAVEMENT SECTION. WHEN PERMEABLE PAVEMENT IS ADJACENT TO A STANDARD PAVEMENT SECTION, EDGE TREATMENT SHALL EXTEND TO THE BOTTOM OF THE PERMEABLE PAVEMENT SECTION OR 2 INCHES BELOW THE IMPERMEABLE PAVEMENT SECTION, WHICHEVER IS DEEPER AND AS APPROVED BY THE GEOTECHNICAL ENGINEER.

WHEN USED AS A BARRIER TO LATERAL WATER FLOW, EDGE TREATMENT DEPTH SHALL BE 12 INCHES MINIMUM OR TO THE BOTTOM OF THE PERMEABLE PAVEMENT SECTION, WHICHEVER IS DEEPER OR DEEPER AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.

2. EXPANSION JOINT IN BAND SPACED @ 15' MAX.
3. GEOMEMBRANE BARRIER SHALL PROVIDE AN IMPERMEABLE BARRIER BETWEEN STANDARD AND PERMEABLE SECTION. IT SHALL BE INSTALLED 1" BELOW FINISHED GRADE OF SURFACING, AS SHOWN. ALTERNATIVELY, THE LINER SHALL FOLD OVER THE PERMEABLE BALLAST A MINIMUM OF 6" OR FURTHER IF RECOMMENDED BY THE GEOTECHNICAL ENGINEER. GEOMEMBRANE BARRIER SEAMS SHALL OVERLAP AT

LEAST 18" OR PER MANUFACTURER'S RECOMMENDATIONS. GEOMEMBRANE BARRIER SHALL EXTEND THE LINEAR LENGTH OF THE PERMEABLE SECTION WHEN ADJACENT TO STANDARD PAVEMENT.

4. GEOTEXTILE FOR SEPARATION PER WSDOT 9.33.2(1), WOVEN, TABLE 3.
5. ALL JOINTS SHALL BE CLEANED AND EDGED. EXTERNAL EDGES SHALL BE 1/2" RADIUS. INTERNAL JOINTS SHALL BE 1/2" RADIUS.
6. ALL EXPANSION JOINTS SHALL BE FULL DEPTH WITH 3/8" PREMOLDED JOINT FILLER.
7. ALL SOFT AND YIELDING FOUNDATION MATERIAL BENEATH BAND SHALL BE REMOVED AND REPLACED WITH CRUSHED SURFACING TOP COURSE (CSTC) PER WSDOT SECTION 9-03.9(3).
8. MAXIMUM DEPTH OF CONCRETE BAND SHALL BE 30 INCHES.
9. A COMBINATION OF GEOMEMBRANE LINER AND CONCRETE BAND MAY BE USED, IF REQUIRED. LINER TO BE PLACED BETWEEN PERMEABLE SECTION AND CONCRETE BAND.
10. CONCRETE BAND SHALL NOT BE USED PERPENDICULAR TO THE FLOW OF TRAFFIC.



### GEOMEMBRANE BARRIER BETWEEN PAVEMENT TYPES



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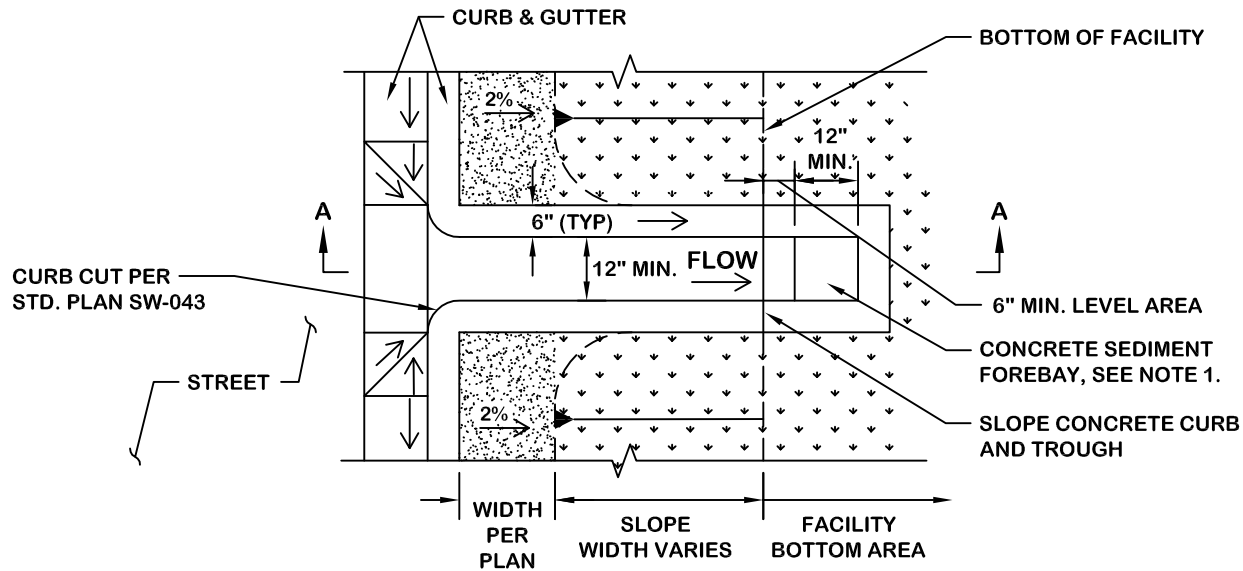
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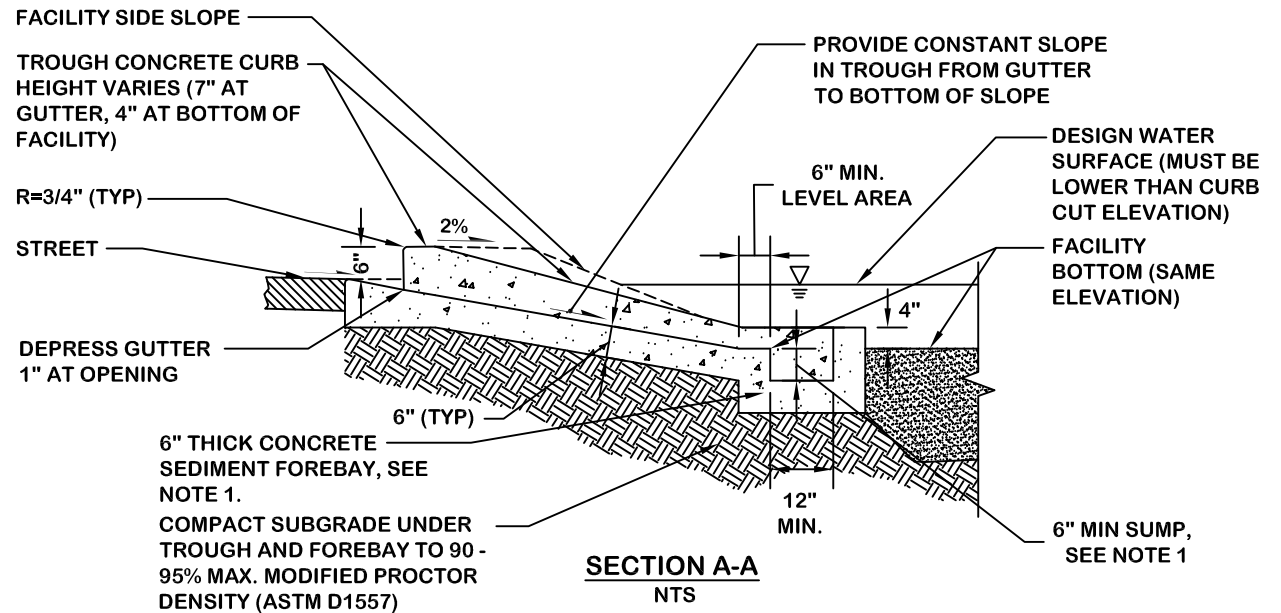
## PERMEABLE PAVEMENT EDGE TREATMENTS

STANDARD PLAN NO.

SW-038



**PLAN**  
NTS



**NOTES:**

1. IF SEDIMENT FOREBAY DEPTH IS GREATER THAN 12", USE STD. PLAN SW-001 WITH FRAME AND VANED GRATE.



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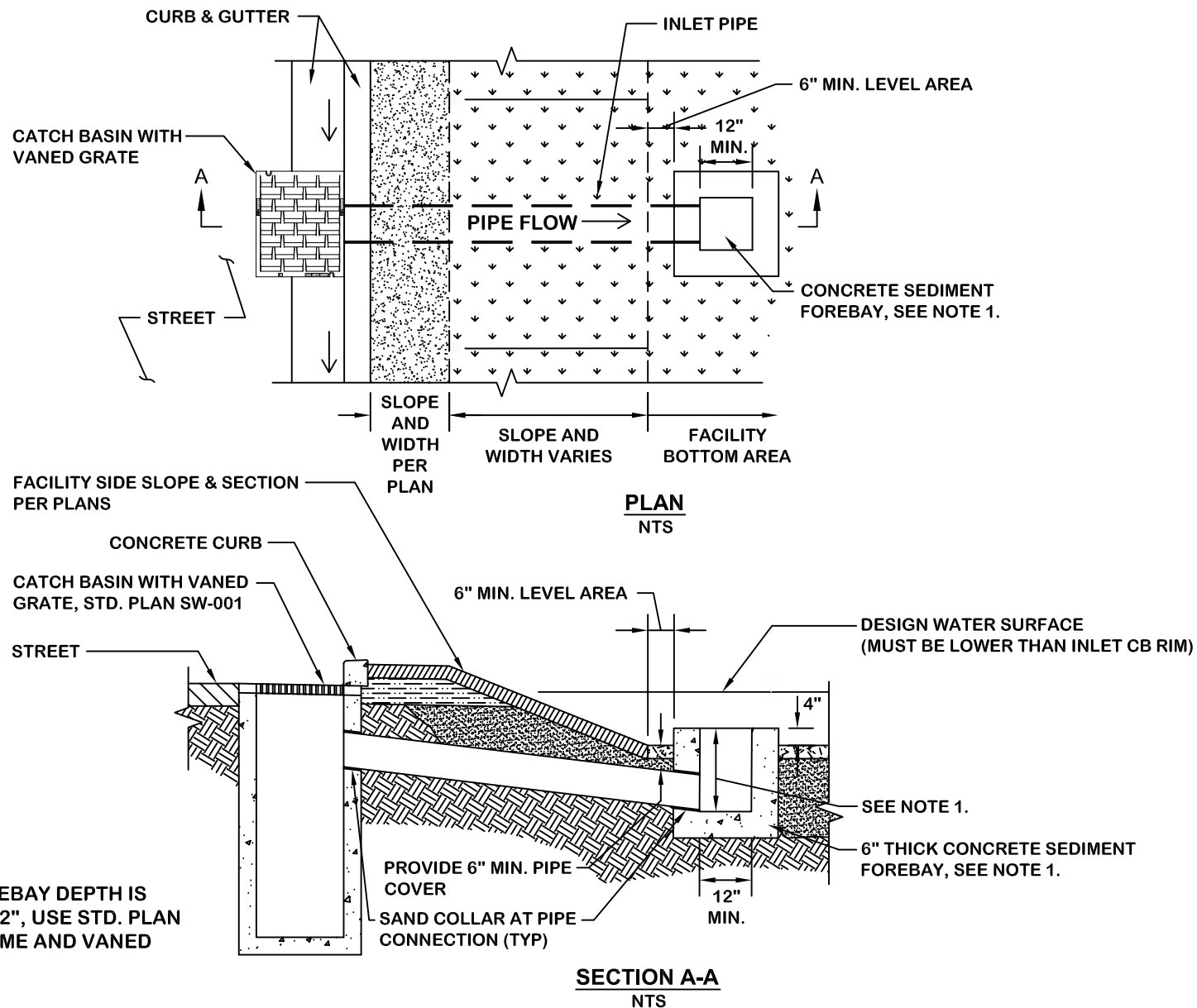
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**STORMWATER SEDIMENT  
FOREBAY WITH CONCRETE  
TROUGH**

STANDARD PLAN NO. SW-039



**NOTES:**

1. IF SEDIMENT FOREBAY DEPTH IS GREATER THAN 12", USE STD. PLAN SW-001 WITH FRAME AND VANED GRATE.



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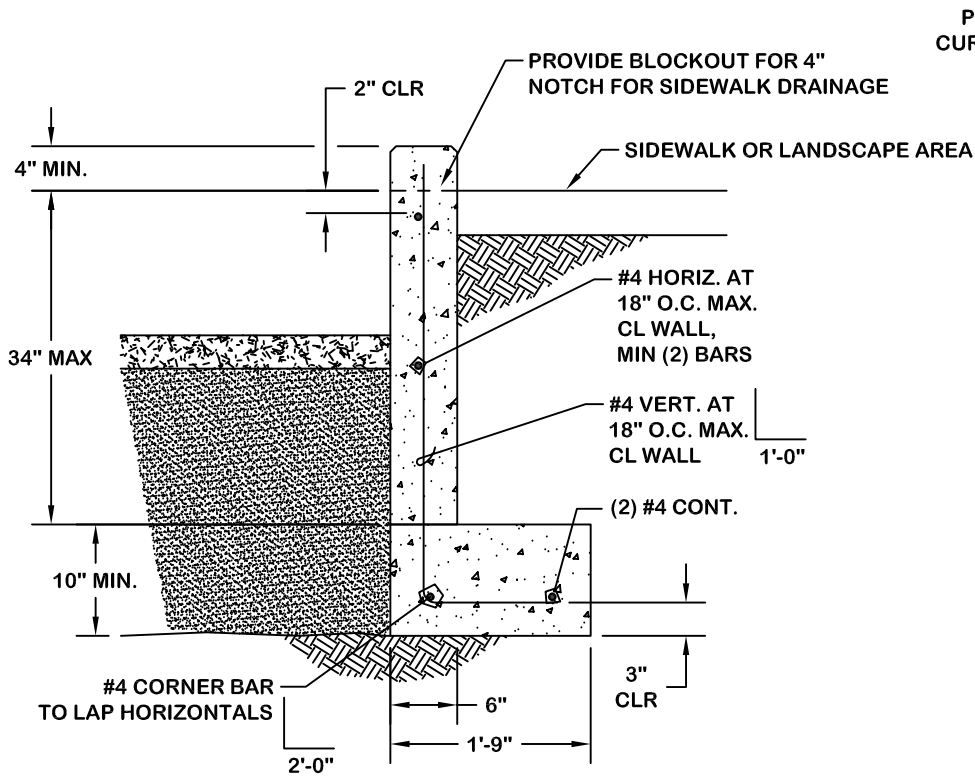
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**STORMWATER ENERGY  
DISSIPATOR WITH PIPED  
INLET**

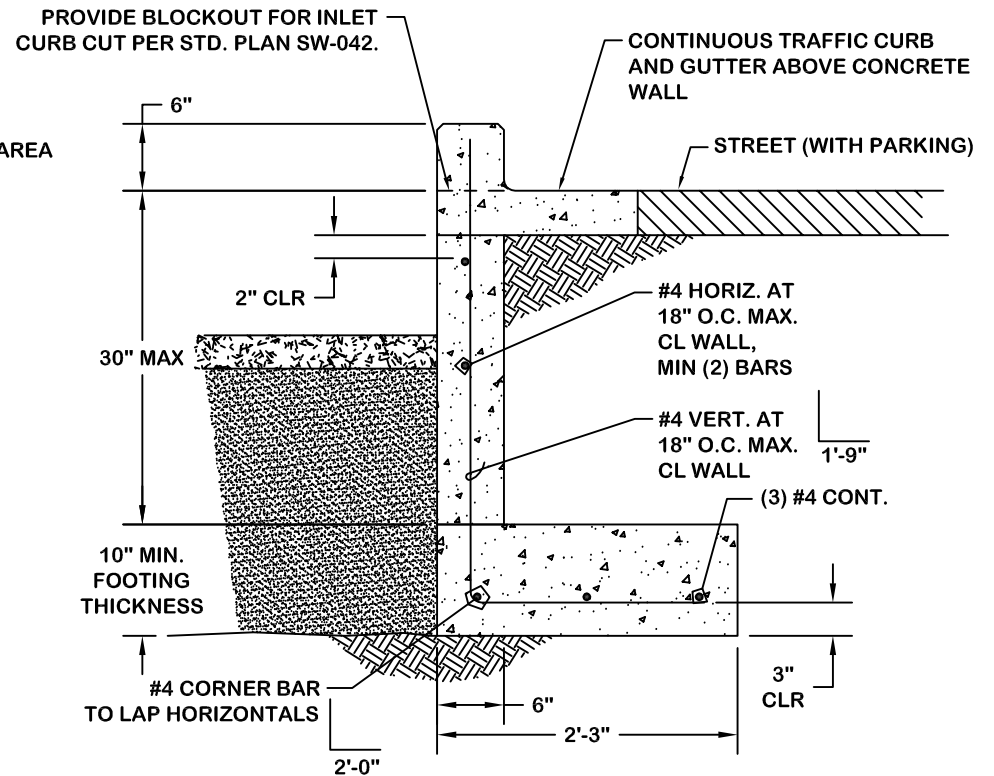
STANDARD PLAN NO.

SW-040



**RETAINING WALL WITHOUT VEHICLE SURCHARGE**

NTS



**RETAINING WALL WITH VEHICLE SURCHARGE** SEE NOTE 8

NTS

**NOTES:**

1. FOOTINGS MAY BE OMITTED IF BUTTRESS IS PROVIDED.
2. FOUNDATION SUBGRADE SHALL CONSIST OF UNDISTURBED NATIVE SOILS OR COMPACTED STRUCTURAL FILL.
3. RETAINING WALL BACKFILL SHALL CONSIST OF GRAVEL BACKFILL FOR WALLS PER WSDOT 9-03.12(2).
4. MINIMUM CONCRETE COMPRESSIVE STRENGTH (F'C) SHALL BE 3000 PSI.
5. STEEL REINFORCING SHALL BE A615 GRADE 60 (60 KSI MINIMUM YIELD STRENGTH).
6. CITY APPROVED ENGINEERED STRUCTURAL DESIGN SHALL BE REQUIRED FOR ANY WALL OVER 4' (MEASURED FROM BOTTOM OF FOOTING) OR UNDER 4' IF WALL HAS A SURCHARGE.
7. PROVIDE CORNER BARS SHOWN AT ALL HORIZ. REINF. IN WALLS AND FOOTINGS. LAP 2'-0" WITH HORIZ. REINF. TYP.
8. THIS DETAIL CAN ONLY BE USED WITH GEOTECHNICAL AND ENGINEERING EVALUATION AND APPROVAL.



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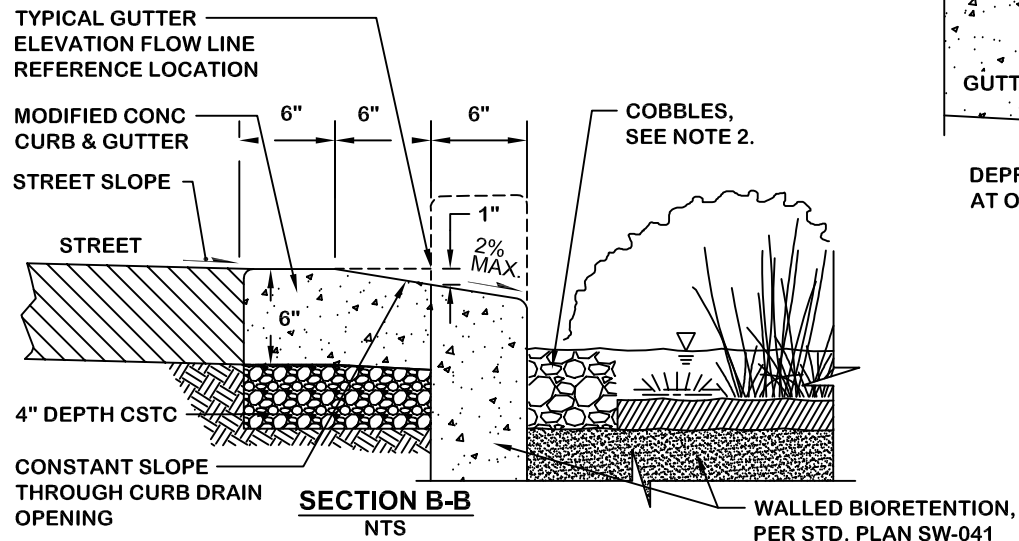
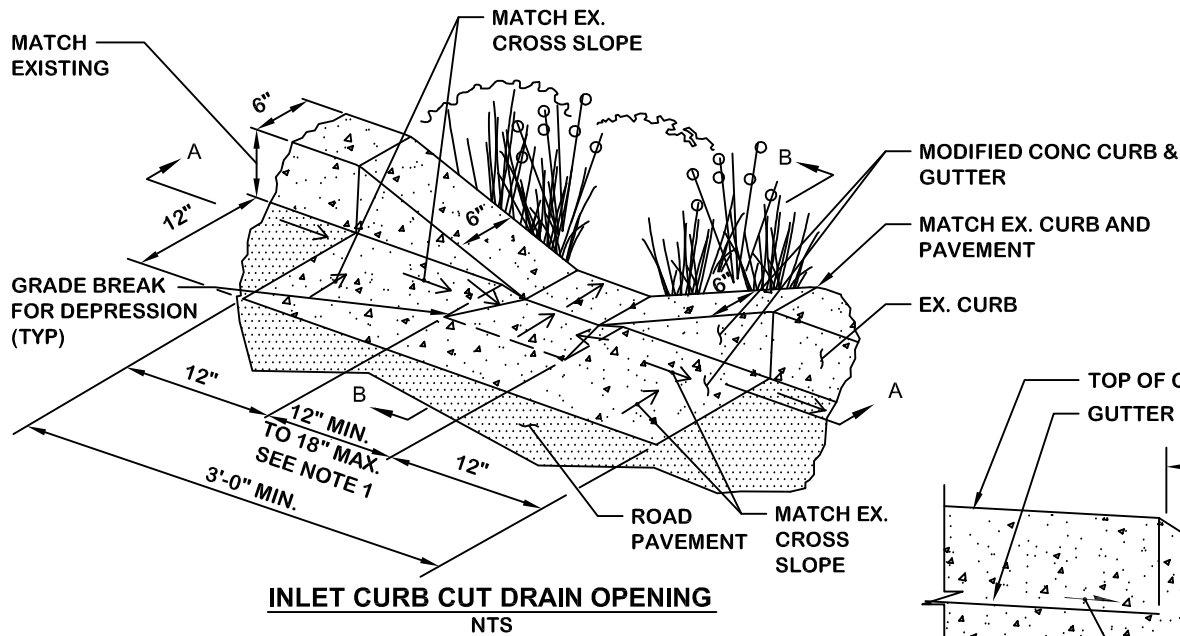
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**WALLED BIORETENTION  
STRUCTURAL FOOTING**

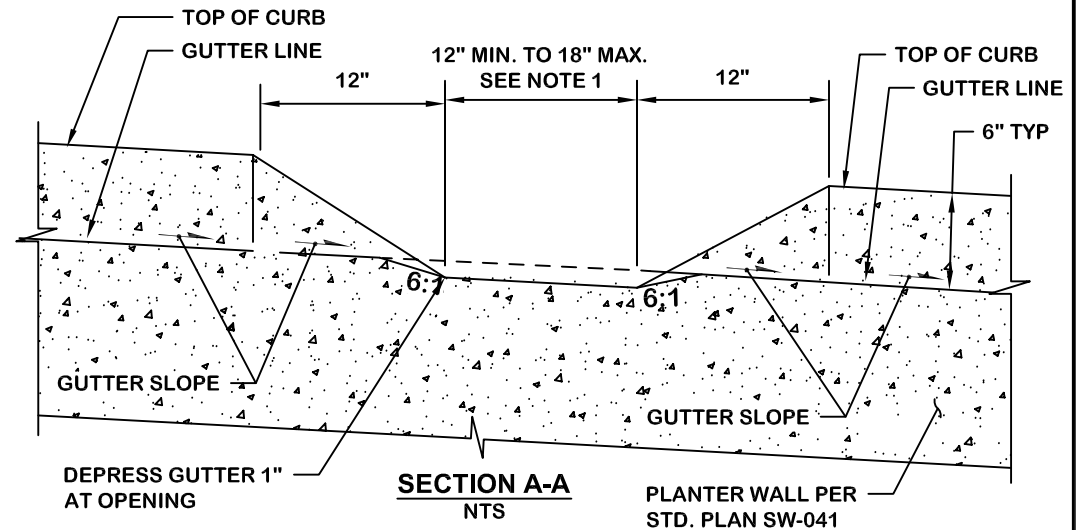
STANDARD PLAN NO. SW-041





#### NOTES:

1. SEE DEPARTMENT OF ECOLOGY SWMMWW BMP T7.30 FOR CURB CUT SIZING. 12" MIN. TO 18" MAX. OPENING.
2. COBBLES SHALL BE 6" COBBLES PER WSDOT 9-03.11(2). COBBLE PAD TO BE 8" THICK BY THE WIDTH OF THE CURB OPENING PLUS 6 INCHES ON EITHER SIDE (WIDTH 24" MIN. TO 30" MAX) X 12" MIN.



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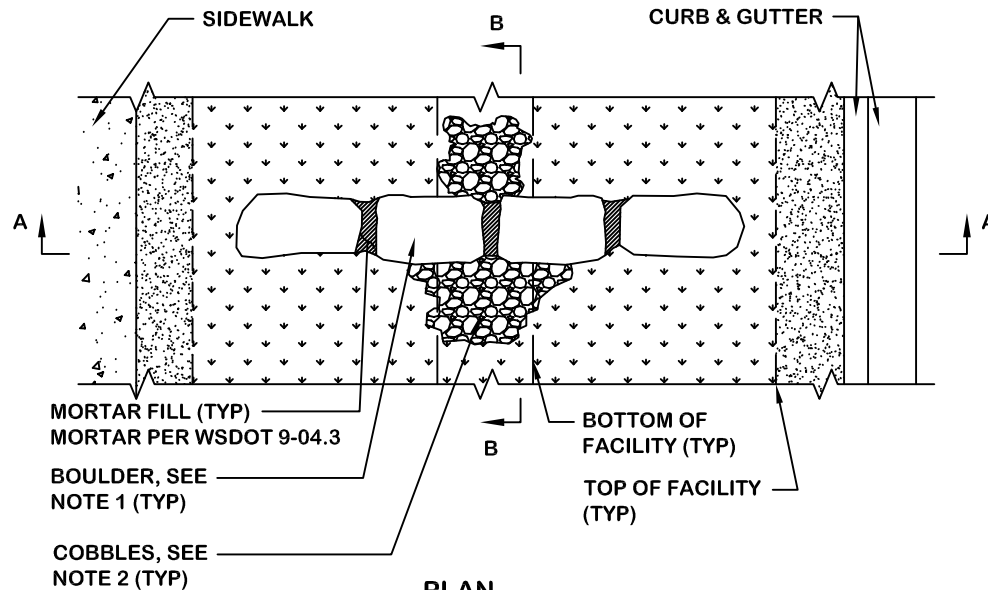
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**CURB CUT AT  
WALLED FACILITY**

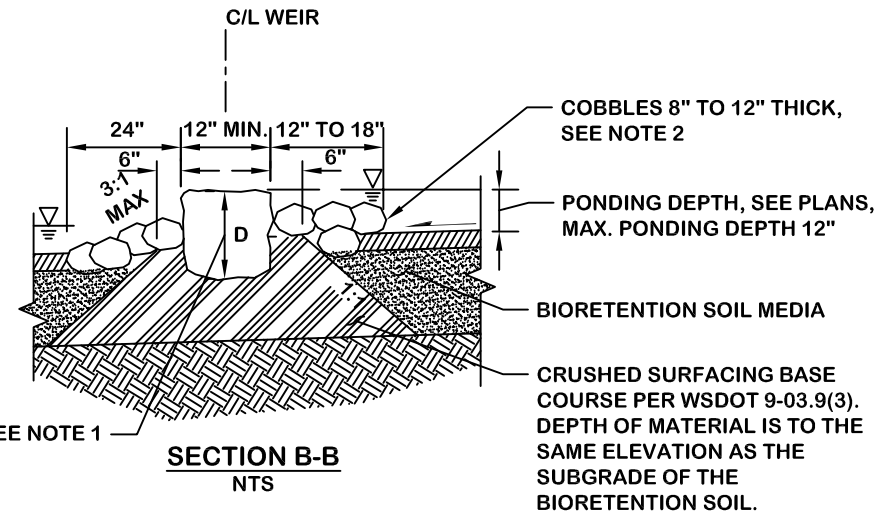
STANDARD PLAN NO.

SW-042

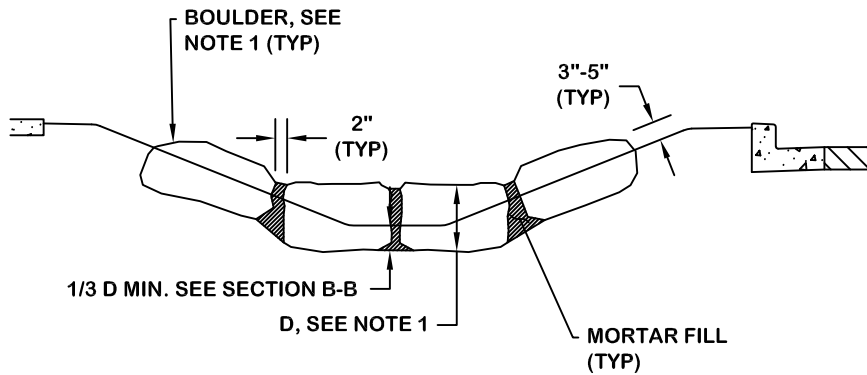




**PLAN**  
NTS



**SECTION B-B**  
NTS



**SECTION A-A**  
NTS

**NOTES:**

1. BOULDER SHALL BE 1-2 MAN PER WSDOT 9-03.11(3). HEIGHT OF BOULDER (D) PER DESIGNER GIVEN FACILITY'S PONDING DEPTH AND GRADE CHANGE ACROSS WEIR. EXPOSED BOULDER FACES SHALL BE SMOOTH, CLEAN BREAKS.
2. COBBLES SHALL BE 8\"/>



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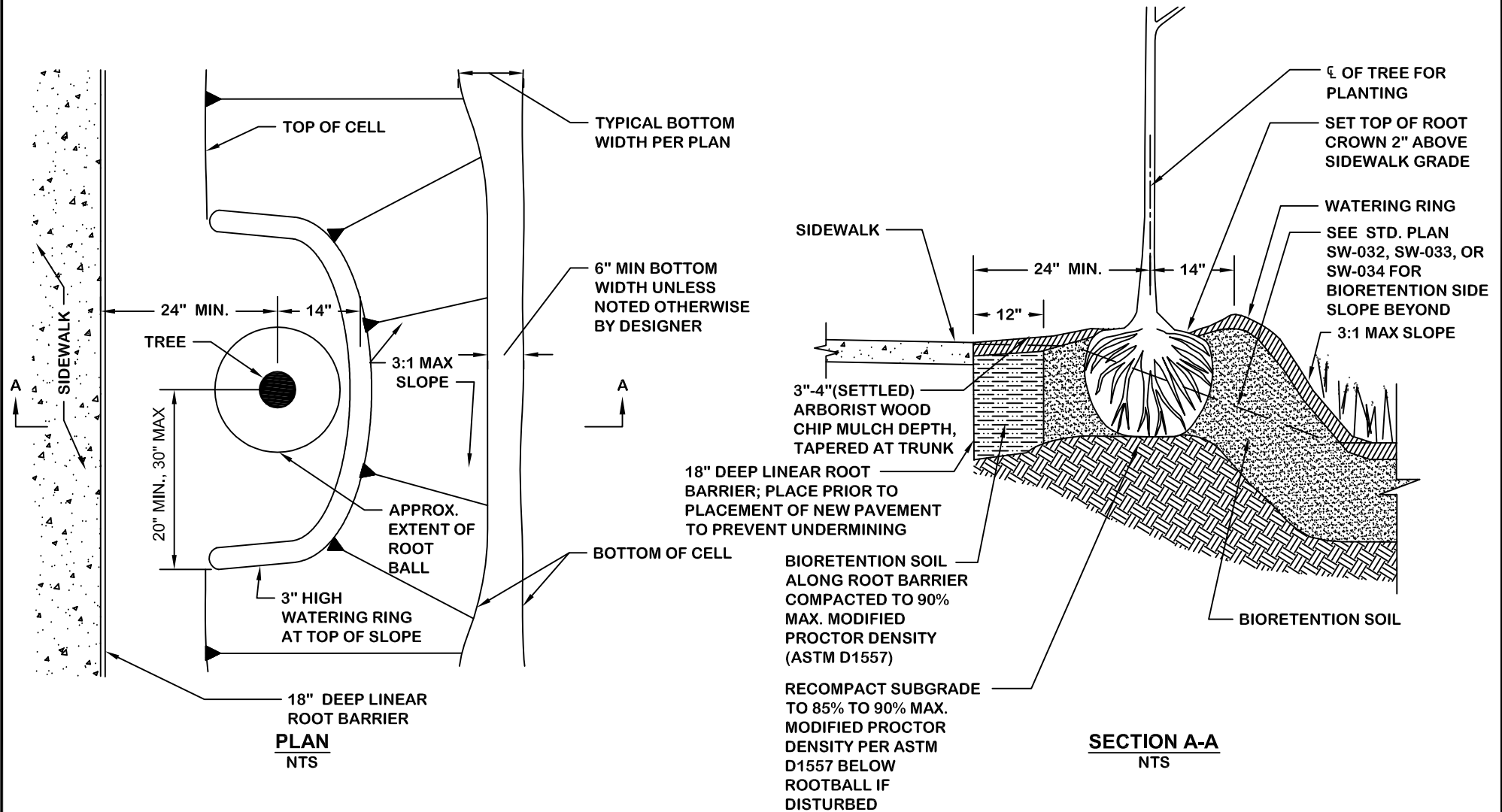
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**BOULDER CHECK  
DAM/WEIR  
FOR BIORETENTION**  
STANDARD PLAN NO. SW-044





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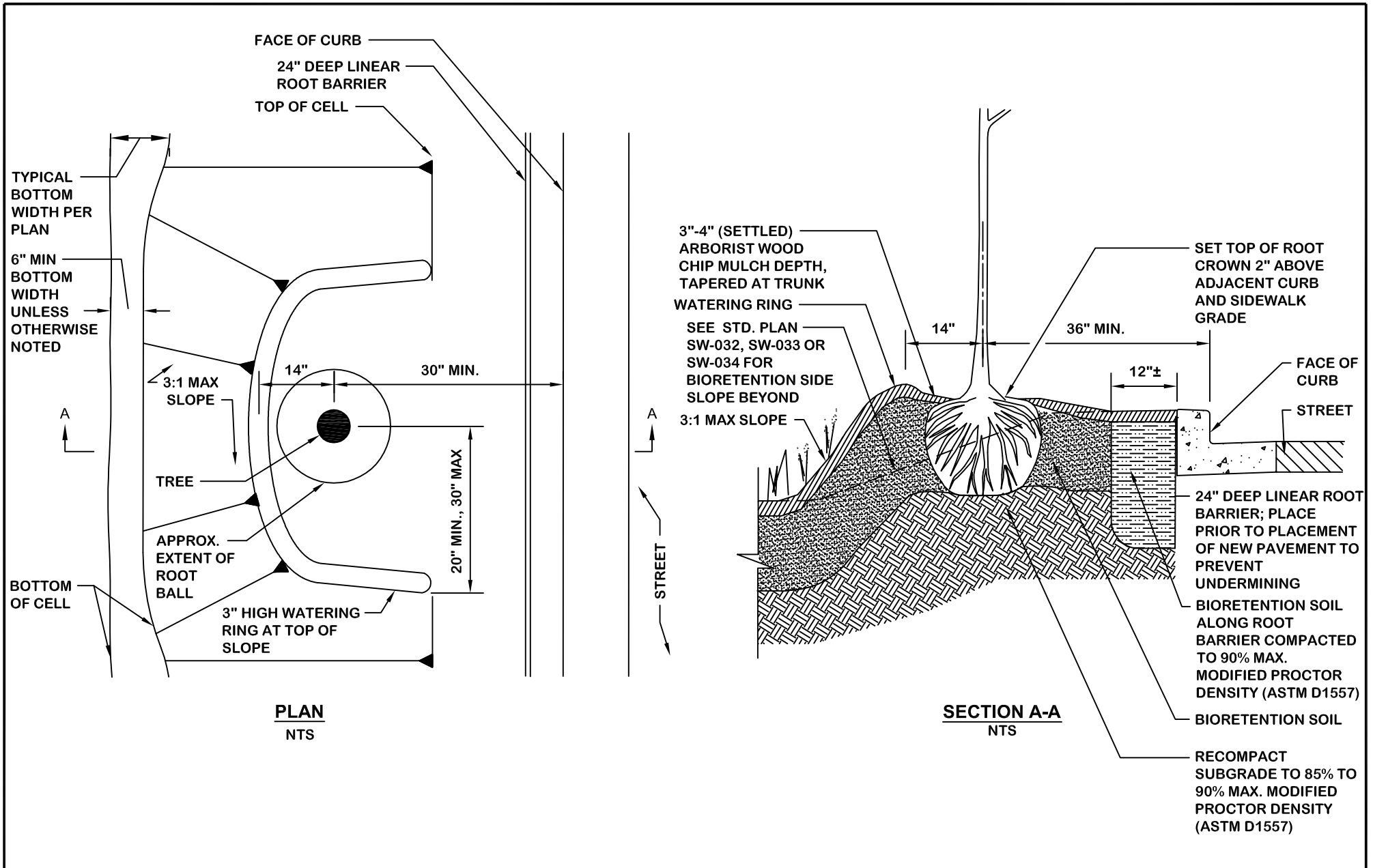
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**TREE PLANTING ON  
BIORETENTION CELL EDGE  
ADJACENT TO SIDEWALK**

STANDARD PLAN NO. SW-045



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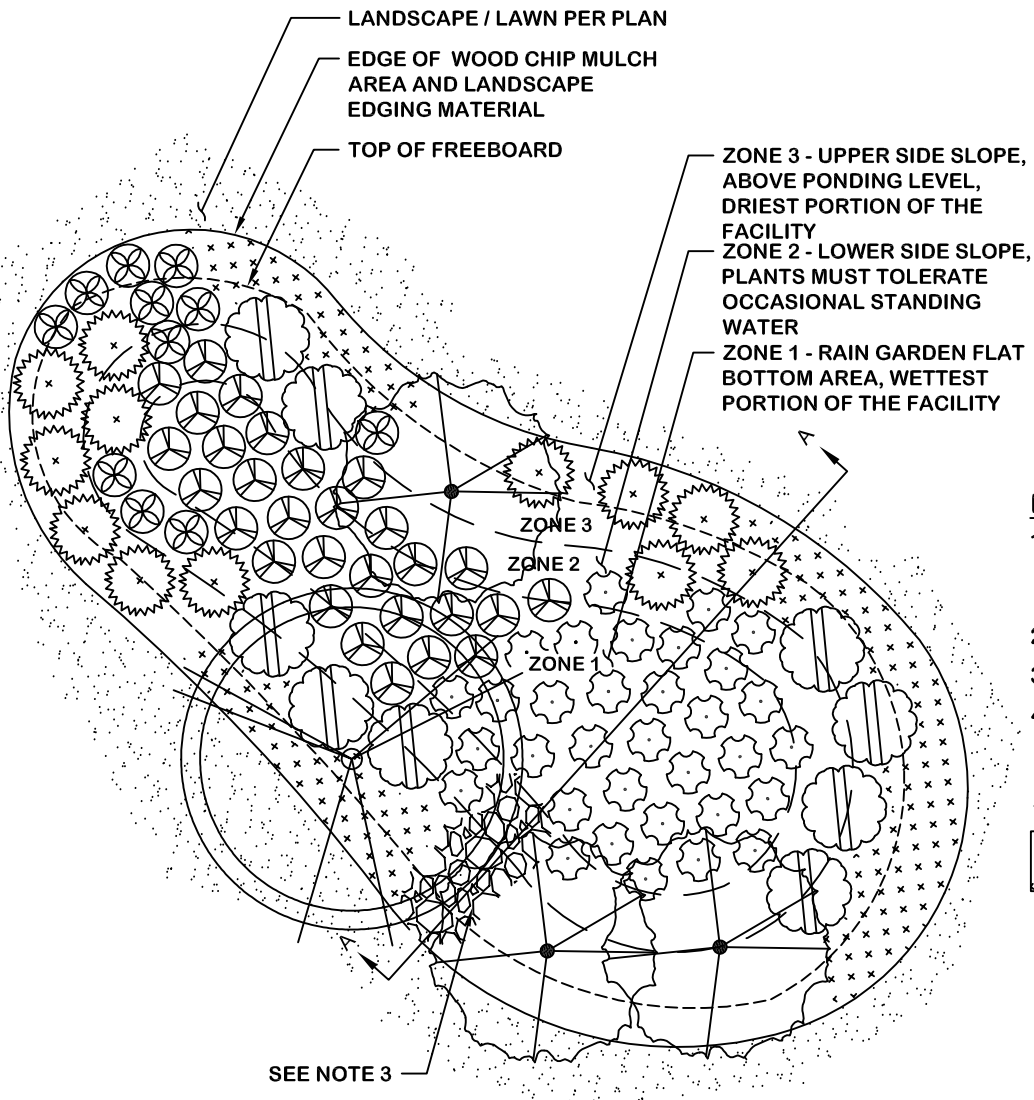
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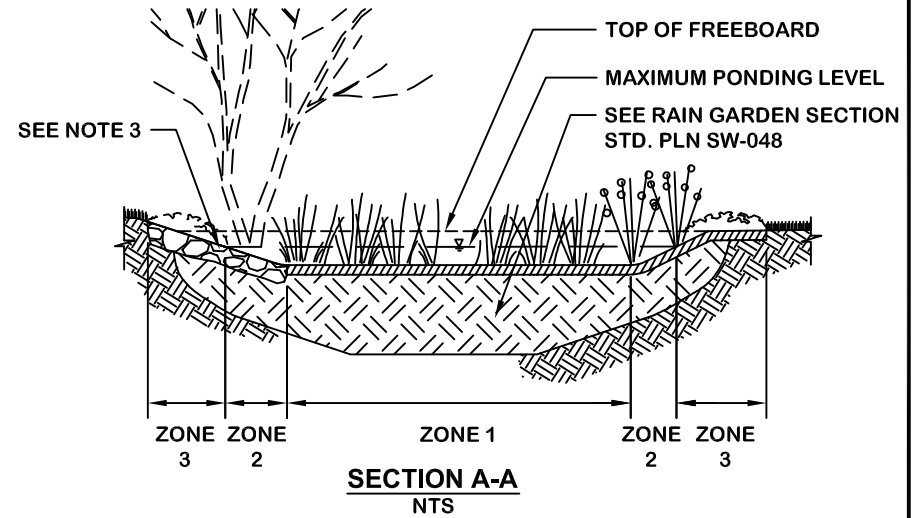
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**TREE PLANTING ON  
BIORETENTION CELL EDGE  
ADJACENT TO CURB**

STANDARD PLAN NO. SW-046



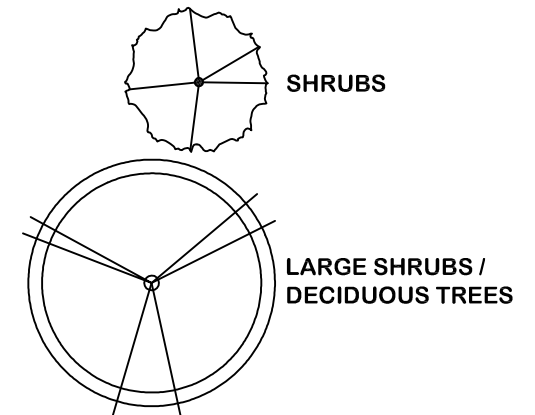
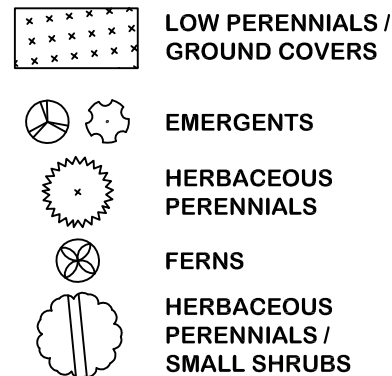
**PLAN**  
NTS

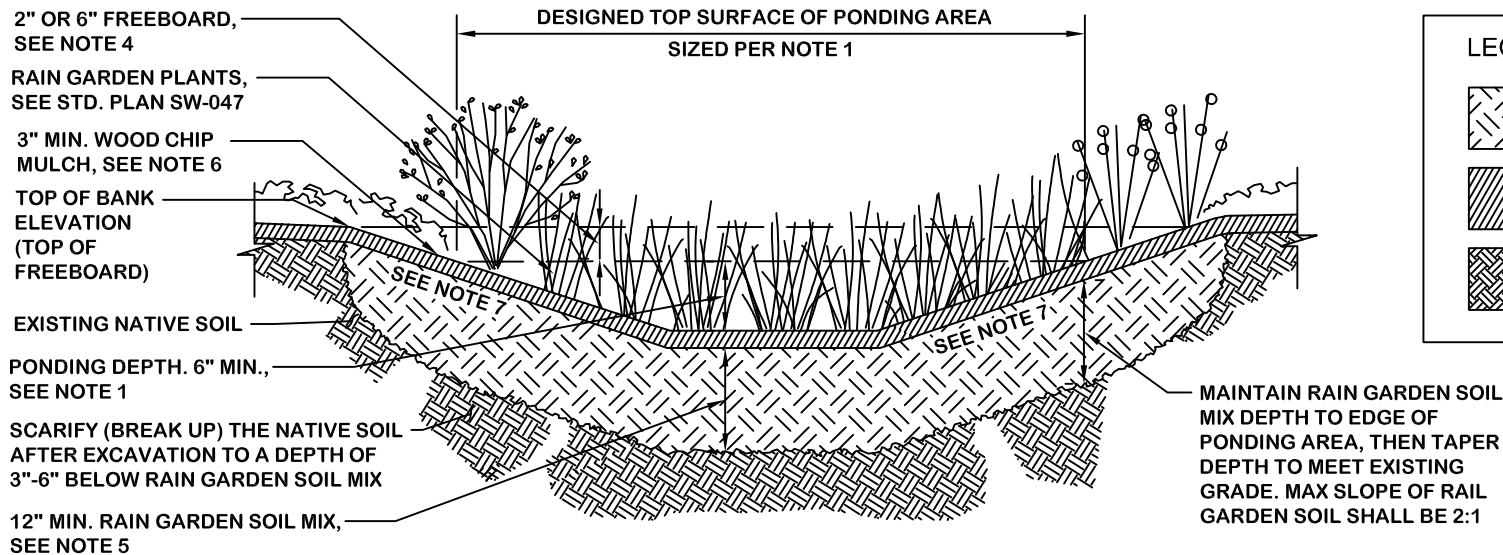


**NOTES:**

1. FOR GUIDANCE ON PLANTS FOR EACH ZONE AND FOR EXAMPLE PLANTING PLANS SEE THE 2013 RAIN GARDEN HANDBOOK FOR WESTERN WASHINGTON.
2. CHOOSE A MINIMUM 50% EVERGREEN PLANTS.
3. KEEP PLANTS CLEAR OF INLET, OUTLET AND/OR OVERFLOWS.
4. PLANTINGS AT MATURITY SHALL NOT INTERFERE WITH SIGHT DISTANCE.

**LEGEND:**





**LEGEND:**

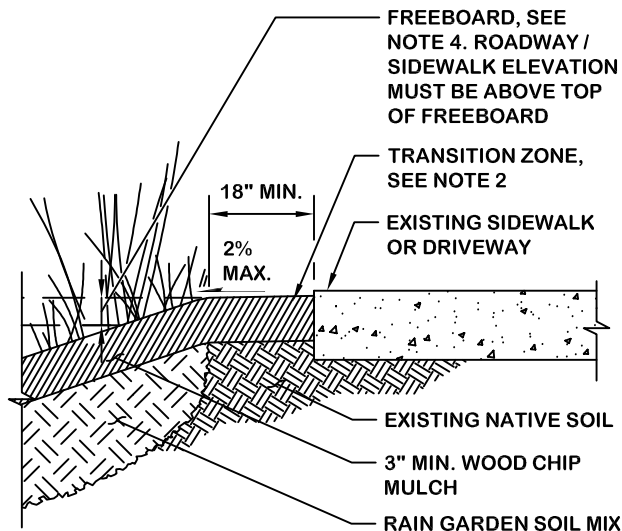


**RAIN GARDEN SECTION**

NTS

**NOTES:**

1. RAIN GARDENS SIZED FOR COMPLIANCE WITH MR #5 SHALL BE IN ACCORDANCE WITH ECOLOGY MANUAL BMP T5.14A, RAIN GARDENS NOT REQUIRED TO COMPLY WITH THE ECOLOGY MANUAL CAN BE SIZED PER THE RAIN GARDEN HANDBOOK FOR WESTERN WASHINGTON - WHERE SIZING IS BASED UPON DEPTH OF EITHER 6-INCHES OR 12-INCHES OF PONDING.
2. TRANSITION ZONE
  - a. 1-INCH GRADE CHANGE FROM EDGE OF SIDEWALK, CURB AND/OR OTHER HARD SURFACE.
  - b. 2% MAX. SLOPE.
  - c. TRANSITION SHALL BE AMENDED SOILS PER ECOLOGY MANUAL BMP T5.13 IF APPLICABLE OR PER NOTE 3.
3. SCARIFY OR TILL SUBGRADE TO 3-INCH DEPTH. PLACE 3-INCHES OF TOPSOIL ON SURFACE AND TILL INTO 5-INCHES OF SITE SOIL. INSTALL 3-INCHES WOODCHIP MULCH OR AS SPECIFIED ON PLANS.
4. FREEBOARD SHALL BE A MINIMUM OF 2-INCHES FOR CONTRIBUTING AREAS UNDER 1,000 SQUARE FEET, OR 6-INCHES FOR CONTRIBUTING AREAS 1,000 SQUARE FEET OR GREATER PER THE ECOLOGY MANUAL.
5. DO NOT COMPACT THE RAIN GARDEN SOIL MIX.
  - a. DO NOT OPERATE HEAVY EQUIPMENT WITHIN THE THE RAIN GARDEN.
  - b. DO NOT PLACE OR AMEND RAIN GARDEN SOIL WHEN THE GROUND IS FROZEN OR WHEN THE SOIL IS EXCESSIVELY WET.
6. CONTINUE MULCH FOR A MINIMUM OF 2-FEET PAST THE TOP OF BANK ELEVATION OR INSTALL LANDSCAPE EDGING IF RAIN GARDEN IS ADJACENT TO TURF.
7. MAXIMUM SIDE SLOPE (2:1 OR 3:1) VARIES WITH SIZE OF CONTRIBUTING AREA. SEE ECOLOGY MANUAL BMP T5.14A OR THE RAIN GARDEN HANDBOOK FOR WESTERN WASHINGTON, AS APPLICABLE.



**RAIN GARDEN ADJACENT  
TO SIDEWALK OR DRIVEWAY**

NTS



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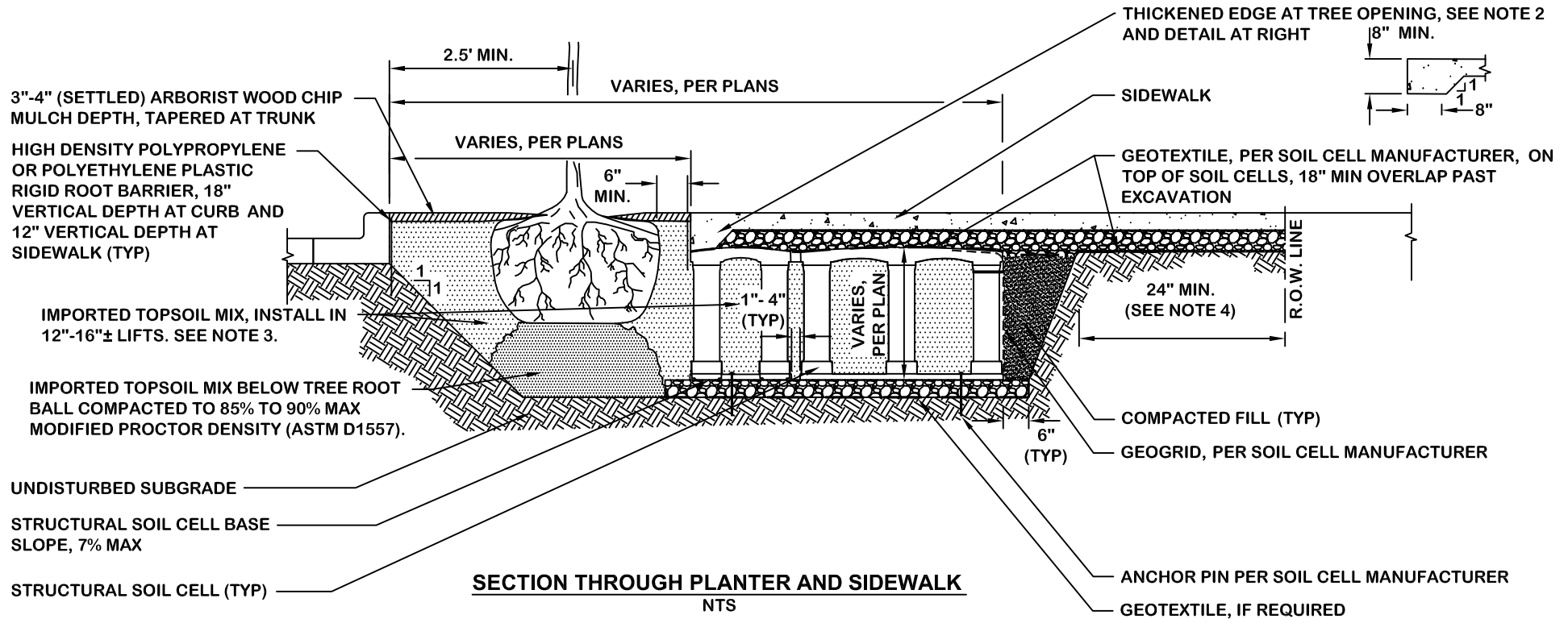
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**RAIN GARDEN -  
SECTION**

STANDARD PLAN NO.

SW-048



#### NOTES:

1. INSTALL SOIL CELLS PER MANUFACTURER'S REQUIREMENTS.
2. SIDEWALK THICKENED EDGE REQUIRED WHERE SOIL CELLS ARE ADJACENT TO PLANTING AREAS. SIDEWALK THICKENED EDGE SHALL EXTEND TO SOIL CELL DECK.
3. STRUCTURAL BEDDING MAY BE REQUIRED PER SOIL CELL MANUFACTURER OR GEOTECHNICAL PROFESSIONAL.
4. DESIGNER TO REVIEW ADJACENT SOIL, TOPOGRAPHY, STRUCTURES AND OTHER ADJACENT CONDITIONS FOR EXCAVATION SETBACK REQUIREMENTS.



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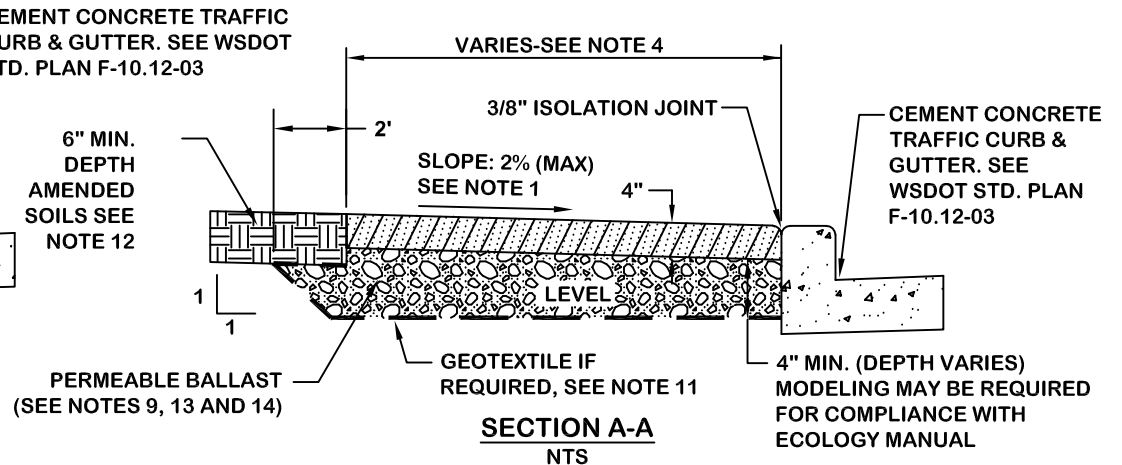
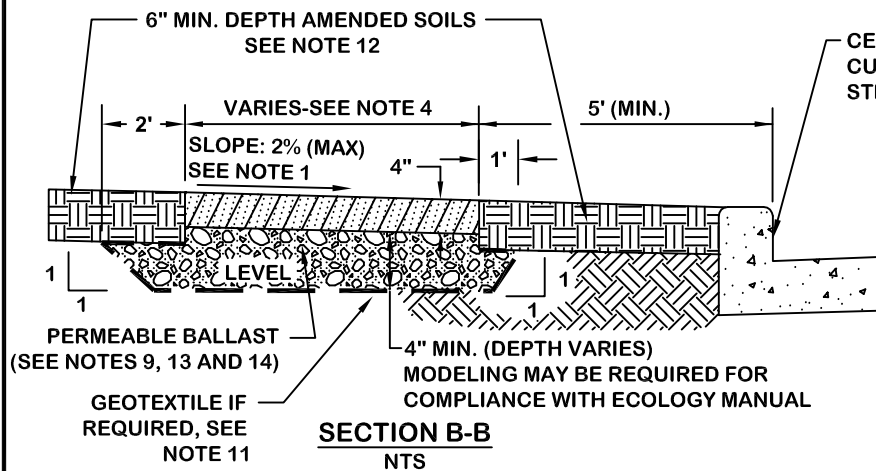
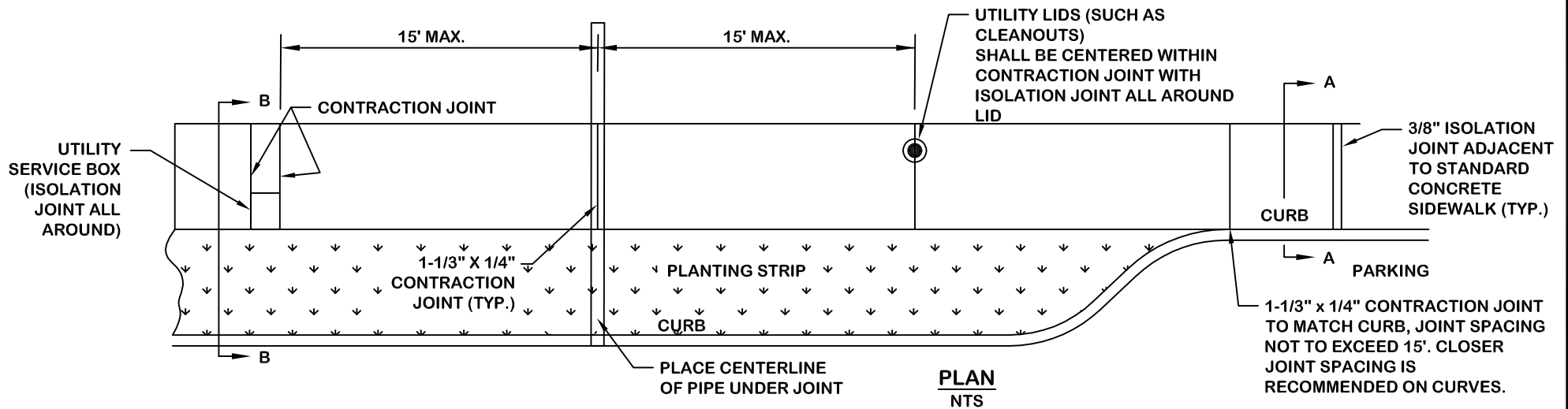
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## STRUCTURAL SOIL CELLS SECTION

STANDARD PLAN NO. SW-049





**NOTES:**

1. SEE SW-051 FOR NOTES.



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**PERVIOUS CONCRETE  
SIDEWALK**

STANDARD PLAN NO. SW-050

**NOTES:**

1. SIDEWALKS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH ADA STANDARDS FOR ACCESSIBLE DESIGN, 28 CFR, PART 35 AND AS SUPPLEMENTED BY THE PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG). CITY OF MUKILTEO PREFERS SIDEWALK CROSS SLOPES TO BE DESIGNED TO A MAXIMUM OF 1.5% AND A MINIMUM OF 1.0%.
2. WHEN PLACING WALK ADJACENT TO EXISTING CURB AND GUTTER, CURB AND GUTTER WILL BE REPAIRED AS NECESSARY BEFORE PLACING CONCRETE FORMS FOR WALK PER RIGHT-OF-WAY RESTORATION POLICY.
3. STAKING IS REQUIRED WHERE NO CURB IS PRESENT.
4. COMBINATION WALK SHALL BE 7' MIN. ON ALL COMMERCIAL SITES AND ARTERIAL STREETS. COMBINATION WALK SHALL BE A MINIMUM OF 5' ON NON ARTERIAL STREETS. DIMENSIONS ARE FROM BACK OF CURB TO BACK OF WALK. SEE CONTRACT PLANS FOR WIDTH AND PLACEMENT OF SIDEWALK.
5. ALL ISOLATION JOINTS SHALL BE FULL DEPTH WITH 3/8" PREMOLDED JOINT FILLER.
6. ALL JOINTS SHALL BE CLEAN AND EDGED. JOINT EDGES SHALL BE 1/2" RADIUS.
7. SUBGRADE PREPARATION SHALL MEET APWA GSP 2-06.3(3) SUBGRADE FOR PERMEABLE PAVEMENTS.
8. ALL SOFT AND YIELDING FOUNDATION MATERIAL SHALL BE REMOVED AND REPLACED WITH BALLAST PER APWA GSP 4-04.2 GRAVEL BASE AND 9-03.9(2).OPT1 PERMEABLE BALLAST.
9. PERMEABLE BALLAST SHALL MEET APWA GSP 4-04.2 GRAVEL BASE AND 9-03.9(2).OPT1 PERMEABLE BALLAST.
10. ALL PERVIOUS SURFACES SHALL BE VACUUMED IMMEDIATELY AFTER COMPLETION OF SAWCUTTING TO PREVENT CLOGGING PER STD. PLAN SW-052.
11. GEOTEXTILE FABRIC MAY BE REQUIRED BETWEEN NATIVE SOILS AND PERMEABLE BALLAST PER THE RECOMMENDATION OF THE GEOTECHNICAL PROFESSIONAL. GEOTEXTILE SHALL BE PER WSDOT 9.33.2(1) TABLES 1 AND 2, NONWOVEN, MODERATE SURVIVABILITY.
12. PLANTING STRIP SOILS SHALL BE PER ECOLOGY MANUAL BMP T5.13, IF APPLICABLE; OR SCARIFY OR TILL SUBGRADE TO 3 INCH DEPTH. PLACE 3 INCHES OF TOPSOIL ON SURFACE AND TILL INTO 5-INCHES OF SITE SOIL.
13. INSTALL 3-INCHES OF ARBORIST WOOD CHIP MULCH OR AS SPECIFIED ON PLANS. TOPSOIL LAYER WITH A MINIMUM ORGANIC MATTER CONTENT OF 10% DRY WEIGHT IN PLANTING BEDS, AND 5% IN TURF AREAS, AND A PH FROM 6.0 TO 8.0 OR MATCHING THE PH OF THE ORIGINAL UNDISTURBED SOIL.
14. WHERE NEEDED, ADJUST BALLAST IN PLANTING STRIP TO ACCOMMODATE PLANTS. KEEP PERMEABLE BALLAST A MINIMUM 2 FEET FROM TRUNK OF TREES.
15. FOR BALLAST DEEPER THAN CURB, PROVIDE A GEOMEMBRANE BARRIER PER STD. PLAN SW-038 BETWEEN PERMEABLE BALLAST AND ROAD SECTION UNLESS ADJACENT ROAD IS PERMEABLE.
16. ALL DISTURBED AREAS NOT COVERED WITH HARD SURFACES SHALL BE STABILIZED BY PLANTING OR MULCHING.



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**PERVIOUS CONCRETE  
SIDEWALK**

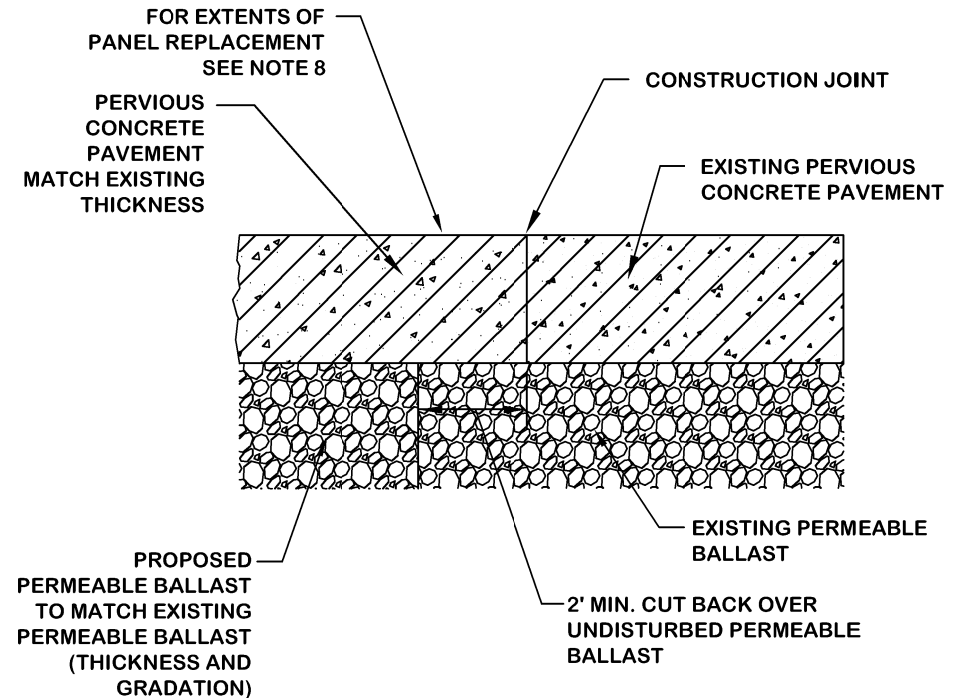
STANDARD PLAN NO. SW-051

## NOTES:

1. TO BE USED ONLY WHERE ABUTTING SURFACES ARE PERVIOUS CONCRETE OR AS DIRECTED IN WRITING BY CITY OF MUKILTEO. PERMEABLE ROADS MAY BE REQUIRED TO BE PATCHED IN AN ALTERNATE MATERIAL AS DIRECTED IN WRITING BY CITY OF MUKILTEO.
2. ALL PAVEMENT RESTORATION WORK SHALL ALSO MEET THE REQUIREMENTS OF THE CITY OF MUKILTEO'S RIGHT OF WAY RESTORATION POLICY.
3. TEMPORARY SURFACE RESTORATION:  
ARTERIALS, INDUSTRIAL AREAS AND/OR ROADS WITH BUS TRAFFIC: TEMPORARY PATCHES SHALL BE COMPACTED AND LEVELED TO A MINIMUM OF 3-INCHES OF HOT-MIX ASPHALT (HMA).  
RESIDENTIALS AND ALLEYS: TEMPORARY PATCHES SHALL BE COMPACTED AND LEVELED TO A MINIMUM OF 2-INCHES OF EITHER HMA OR COLD-MIX ASPHALT. TEMPORARY PATCHES BETWEEN OCTOBER 1ST AND MARCH 31ST SHALL BE MADE WITH HMA UNLESS OTHERWISE APPROVED.
4. ALL PERMANENT FINAL PATCHES SHALL BE RECTANGULAR IN SHAPE AND CONSTRUCTED PARALLEL AND PERPENDICULAR TO THE ROAD CENTERLINE.
5. WHERE EXISTING PAVEMENT DEFECTS ARE IN CLOSE PROXIMITY TO THE NEW CUT, THE INSPECTOR MAY REQUIRE ADDITIONAL PAVEMENT REMOVAL TO ELIMINATE THE PAVEMENT DEFECT.
6. THE FINAL CUT EDGE OF PAVED SURFACES SHALL BE SMOOTH AND STRAIGHT, CONSISTENT WITH GRINDING OR SAW CUTTING DEVICES. NO JAGGED, BROKEN OR UNDERMINED EDGES ARE ALLOWED. CUTTING WHEEL RUN-OUT BEYOND THE LIMITS OF THE OPENING SHALL BE FILLED IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATION 5-05.3(8)B FOR CEMENT CONCRETE SURFACES. JOINT SEALANT SHALL NOT MIGRATE BEYOND RUN-OUT AREAS.
7. ALL PERVIOUS SURFACES SHALL BE VACUUMED IMMEDIATELY AFTER COMPLETION OF SAWCUTTING TO PREVENT CLOGGING.
8. PERMANENT PANEL REPLACEMENT:  
ARTERIALS, INDUSTRIAL AREAS AND/OR ROADS WITH BUS TRAFFIC: 100% PANEL REPLACEMENT IS REQUIRED FOR ALL AFFECTED PANELS. MONOLITHIC CURBS WILL BE POURED AT TIME OF PANEL REPLACEMENT.

RESIDENTIAL AND ALLEYS: PANELS CUT GREATER THAN  $\frac{1}{2}$  THE PANEL LENGTH, WIDTH, OR TOTAL AREA, INCLUDING THE 2-FOOT CUT BACK, WILL REQUIRE 100% PANEL REPLACEMENT. PANELS CUT LESS THAN  $\frac{1}{2}$  THE PANEL LENGTH, WIDTH, OR TOTAL AREA, INCLUDING THE 2-FOOT CUT BACK WILL REQUIRE 50% PANEL REPLACEMENT. THREE-PIECE PANELS ARE NOT ACCEPTABLE AND WILL REQUIRE 100% PANEL REPLACEMENT.

9. PERVIOUS CONCRETE PAVEMENT MIX SHALL BE APPROVED IN WRITING BY THE CITY OF MUKILTEO.
10. WHERE GEOTEXTILE FABRIC OR GEOMEMBRANE LINER EXIST UNDER THE PERMEABLE BALLAST, REPLACE WITH SAME MATERIAL. ADDITIONAL WIDTH OF EXCAVATION MAY BE NECESSARY TO OVERLAY FABRIC OR LINER. WHERE A LINER IS USED TO CREATE A WATERTIGHT BARRIER, REPAIR PER MANUFACTURER'S SPECIFICATIONS TO MAINTAIN A WATERTIGHT BARRIER.



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**TYPICAL PAVEMENT  
RESTORATION FOR  
PERVIOUS CONCRETE**

STANDARD PLAN NO.

SW-052



RESERVED FOR FUTURE PLANS



CITY OF  
**MUKILTEO**

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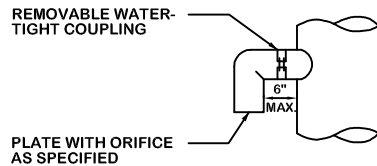
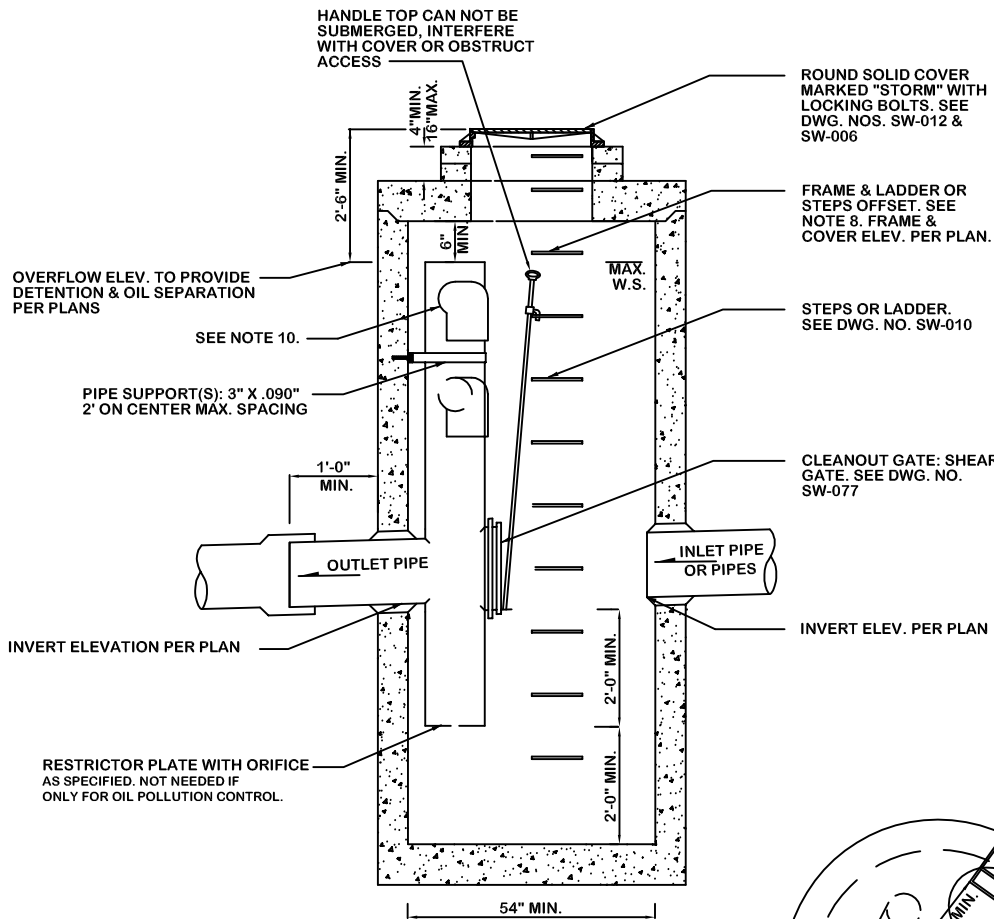
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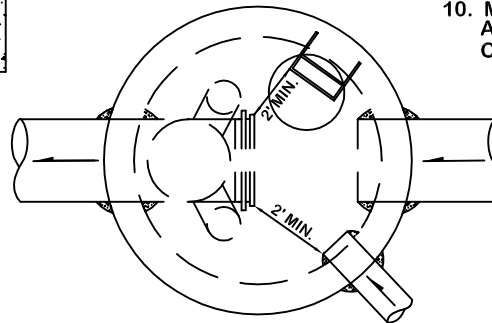
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**RESERVED FOR FUTURE  
PLANS**

STANDARD PLAN NO. SW-053-075



**CATCH BASIN TYPE 2**  
DIAM. AS REQUIRED  
SEE DWG. NO. SW-004



#### NOTES:

1. PIPE SIZES AND SLOPES: PER PLANS.
2. OUTLET CAPACITY: NOT LESS THAN COMBINED INLETS.
3. EXCEPT AS SHOWN OR NOTED, UNITS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS FOR CATCH BASIN TYPE 2, 54" MIN. DIAM.
4. PIPE SUPPORTS AND RESTRICTOR/SEPARATOR SHALL BE OF SAME MATERIAL, AND BE ANCHORED AT 3' MAX. SPACING BY 5/8" DIAM. STAINLESS STEEL EXPANSION BOLTS OR EMBEDDED 2" IN WALL.
5. THE RESTRICTOR/SEPARATOR SHALL BE FABRICATED FROM .060" ALUMINUM, OR .064" ALUMINIZED STEEL, OR .064" GALVANIZED STEEL PIPE; IN ACCORDANCE WITH AASHTO M 36, M 196, M 197 AND M 274. GALVANIZED STEEL SHALL HAVE TREATMENT 1.
6. OUTLET SHALL BE CONNECTED TO CULVERT OR STORM DRAIN WITH A STANDARD COUPLING BAND FOR CORRUGATED METAL PIPE, OR GROUTED INTO THE BELL OF CONCRETE PIPE.
7. THE VERTICAL RISER STEM OF THE RESTRICTOR/SEPARATOR SHALL BE THE SAME DIAM. AS THE HORIZONTAL OUTLET PIPE, WITH AN 8" MIN. DIAM.
8. FRAME AND LADDER OR STEPS OFFSET SO THAT:
  - A. CLEANOUT GATE IS VISIBLE FROM TOP.
  - B. CLIMB DOWN SPACE IS CLEAR OF RISER AND CLEANOUT GATE.
  - C. FRAME IS CLEAR OF CURB.
9. IF METAL OUTLET PIPE CONNECTS TO CEMENT CONCRETE PIPE: OUTLET PIPE TO HAVE SMOOTH O.D. EQUAL TO CONCRETE PIPE I.D. LESS 1/4".
10. MULTI-ORIFICE ELBOWS MAY BE LOCATED AS SHOWN OR ALL ON ONE SIDE OF RISER TO ASSURE LADDER CLEARANCE.



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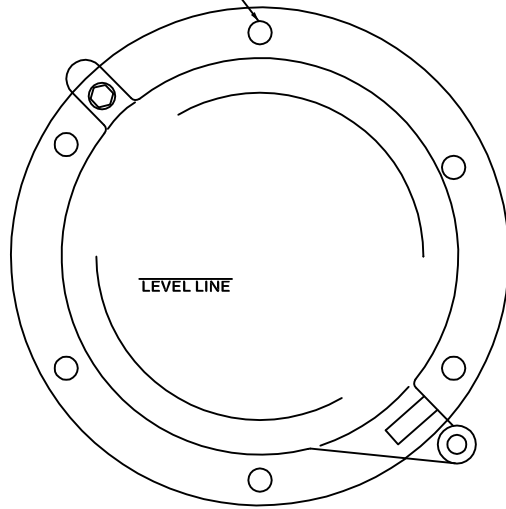
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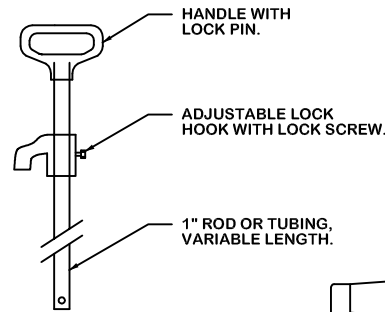
**FLOW RESTRICTOR/OIL  
POLLUT. DEBRIS CNTRL  
TYPE (FROP-T) INSTAL.**

STANDARD PLAN NO. SW-076

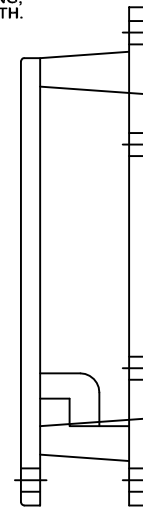
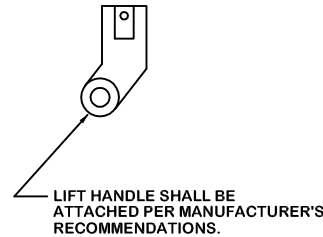
SIX EVENLY SPACED HOLES  
ON 10 3/8" BOLT CIRCLE  
FOR BOLTING TO FLANGE  
CONNECTION.



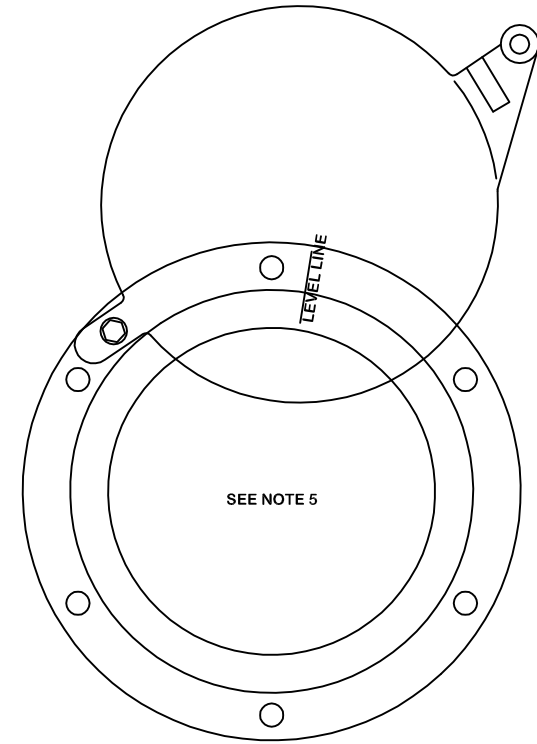
FRONT



LIFT HANDLE



SIDE



MAXIMUM OPENING  
OF GATE

**NOTES:**

1. SHEAR GATE SHALL BE ALUMINUM ALLOY PER ASTM B-26-ZG-32a OR CAST IRON ASTM A48 CLASS 30B AS REQUIRED.
2. GATE SHALL BE 8" DIAM. UNLESS OTHERWISE SPECIFIED.
3. GATE SHALL BE JOINED TO TEE SECTION BY BOLTING (THROUGH FLANGE), WELDING, OR OTHER SECURE MEANS.
4. LIFT ROD: AS SPECIFIED BY MFR. WITH HANDLE EXTENDING TO WITHIN ONE FOOT OF COVER AND ADJUSTABLE HOOK LOCK FASTENED TO FRAME OR UPPER HANDHOLD.
5. GATE SHALL NOT OPEN BEYOND THE CLEAR OPENING BY LIMITED HINGE MOVEMENT, STOP TAB, OR SOME OTHER DEVICE.
6. NEOPRENE RUBBER GASKET REQUIRED BETWEEN RISER MOUNTING FLANGE AND GATE FLANGE.
7. MATING SURFACES OF LID AND BODY TO BE MACHINED FOR PROPER FIT.
8. FLANGE MOUNTING BOLTS SHALL BE 3/8" DIAM. STAINLESS STEEL.
9. ALTERNATE CLEANOUT/SHEAR GATES TO THE DESIGN SHOWN ARE ACCEPTABLE, PROVIDED THEY MEET THE MATERIAL SPECIFICATIONS ABOVE AND HAVE A SIX BOLT, 10 3/8" BOLT CIRCLE FOR BOLTING TO THE FLANGE CONNECTION.



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DATE

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DATE

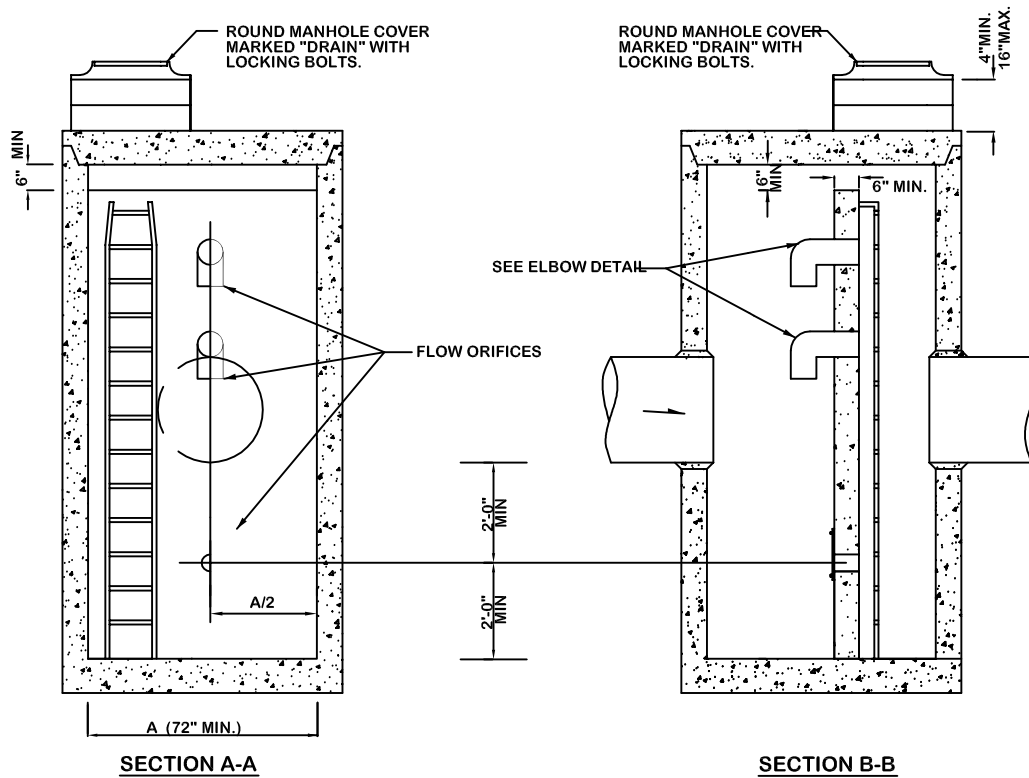
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CITY ENGINEER

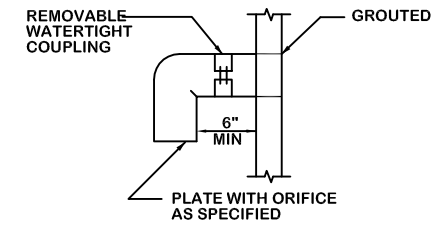
11/22/2016  
DATE

**SHEAR GATE  
DETAIL**

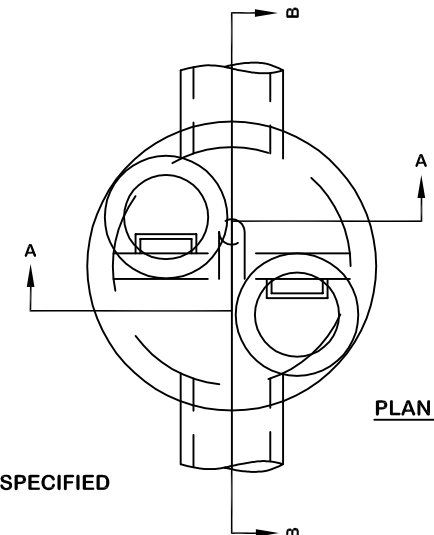
STANDARD PLAN NO. SW-077



ELEVATION



ELBOW DETAIL



PLAN

**NOTES:**

1. PIPE SIZE, SLOPES AND ALL ELEVATIONS: PER PLANS.
2. OUTLET CAPACITY: NOT LESS THAN COMBINED INLETS.
3. CATCH BASIN: TYPE 2, TO BE CONSTRUCTED IN ACCORDANCE WITH DWG. NO. SW-003 AND AASHTO M199 UNLESS OTHERWISE SPECIFIED
4. COVERS: ROUND, SOLID MARKED "DRAIN," WITH LOCKING BOLTS
5. ORIFICES: SIZED AND LOCATED AS REQUIRED, WITH LOWEST ORIFICE MINIMUM 2' FROM BASE
6. BAFFLE WALL SHALL HAVE #4 BAR AT 12" SPACING EACH WAY.
7. PRECAST BAFFLE WALL SHALL BE KEYED AND GROUTED IN PLACE.
8. BOTTOM ORIFICE PLATE TO BE 1/4" MIN. GALVANIZED STEEL AND ATTACHED WITH 1/2" STAINLESS STEEL BOLTS. OMIT ORIFICE PLATE IF ONLY FOR OIL SEPARATION.
9. UPPER FLOW ORIFICE SHALL BE ALUMINUM, ALUMINIZED STEEL OR GALVANIZED STEEL. SEE DWG. NO. SW-076. GALVANIZED STEEL SHALL HAVE TREATMENT 1.



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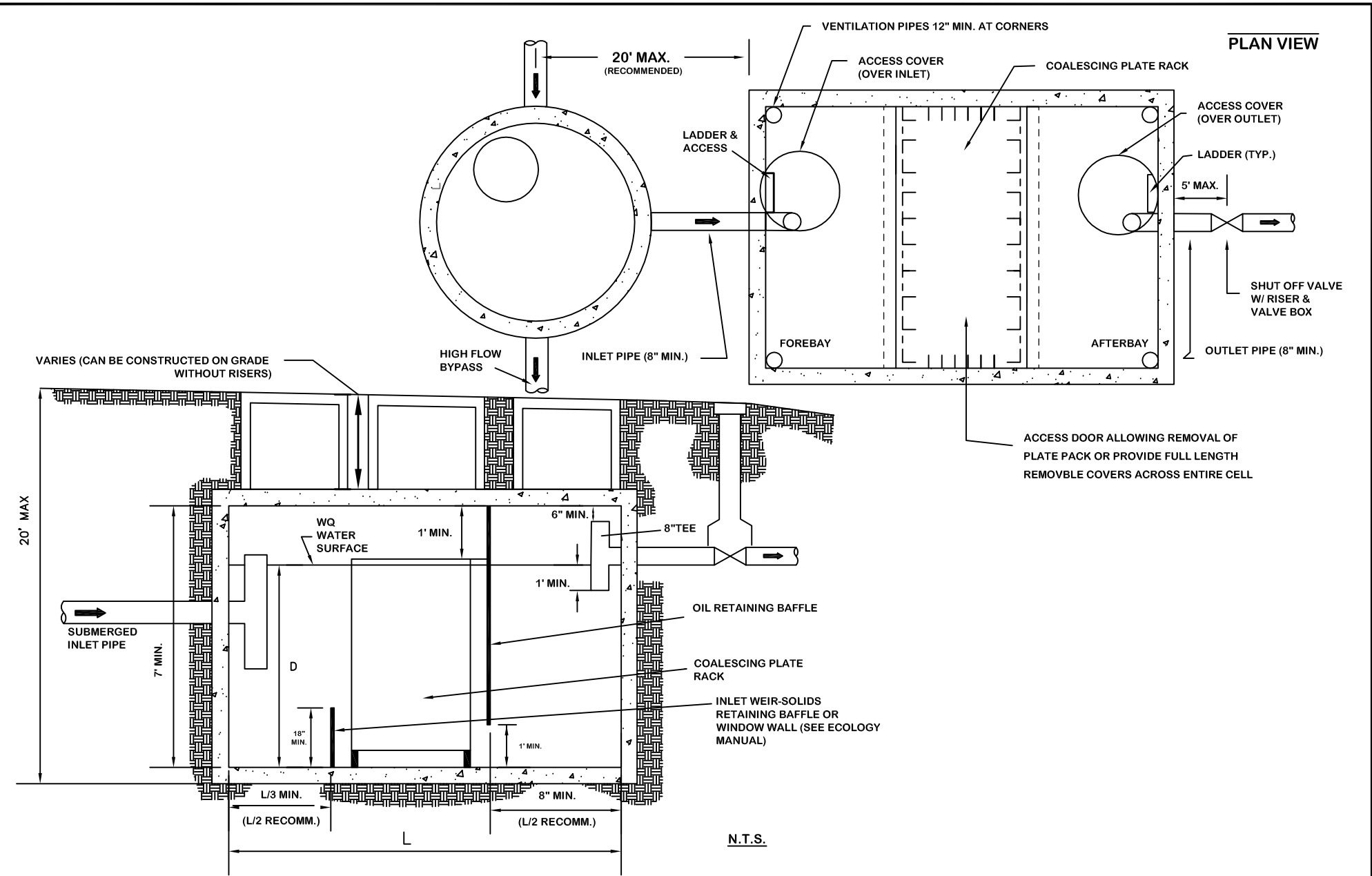
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**FLOW RESTRICTOR/OIL  
POLLUT. DEBRIS CNTRL  
TEE TYPE (FROP-B) INSTAL.**  
STANDARD PLAN NO. SW-078



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# **STANDARD COALESCING PLATE SEPARATOR**

STANDARD PLAN NO. SW-079

RESERVED FOR FUTURE PLANS



CITY OF  
**MUKILTEO**

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DATE

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DATE

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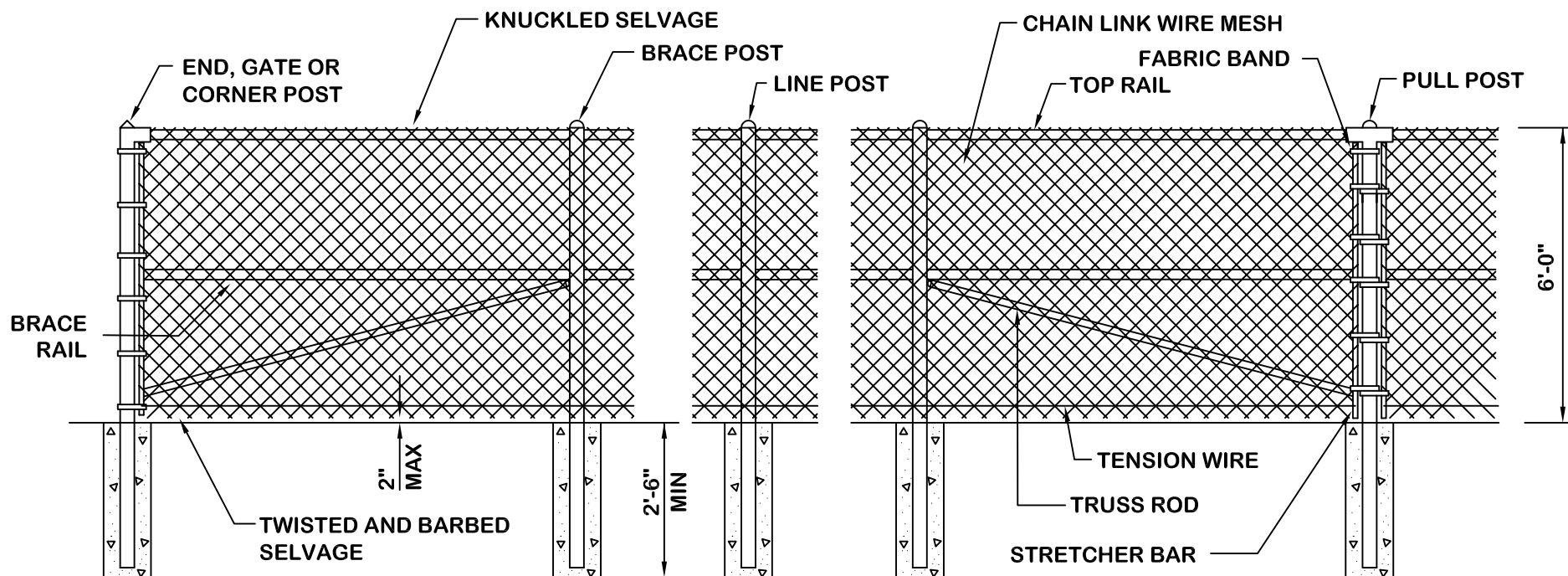
CITY ENGINEER

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**RESERVED FOR FUTURE  
PLANS**

STANDARD PLAN NO.

SW-080-095



**NOTES:**

1. MATERIAL SHALL BE SCHEDULE 40
2. WIRE MESH SHALL BE 9 GAUGE WIRE
3. BARBED WIRE TO BE PLACED ON TOP AS DIRECTED
4. WOOD SLATS MAY BE REQUIRED
5. SCHEDULE 40 IS REQUIRED FOR ALL POSTS FOR FUTURE SLATES AND WIND SHEAR.
6. TENSION WIRE SHALL BE 7 GAUGE
7. ALL CHAIN LINK FENCE SHALL BE BLACK VINYL



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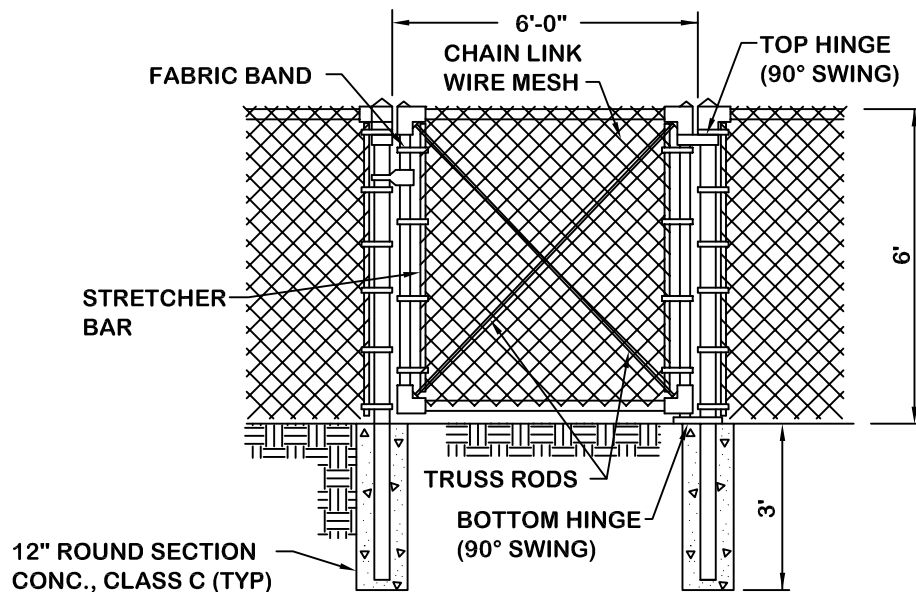
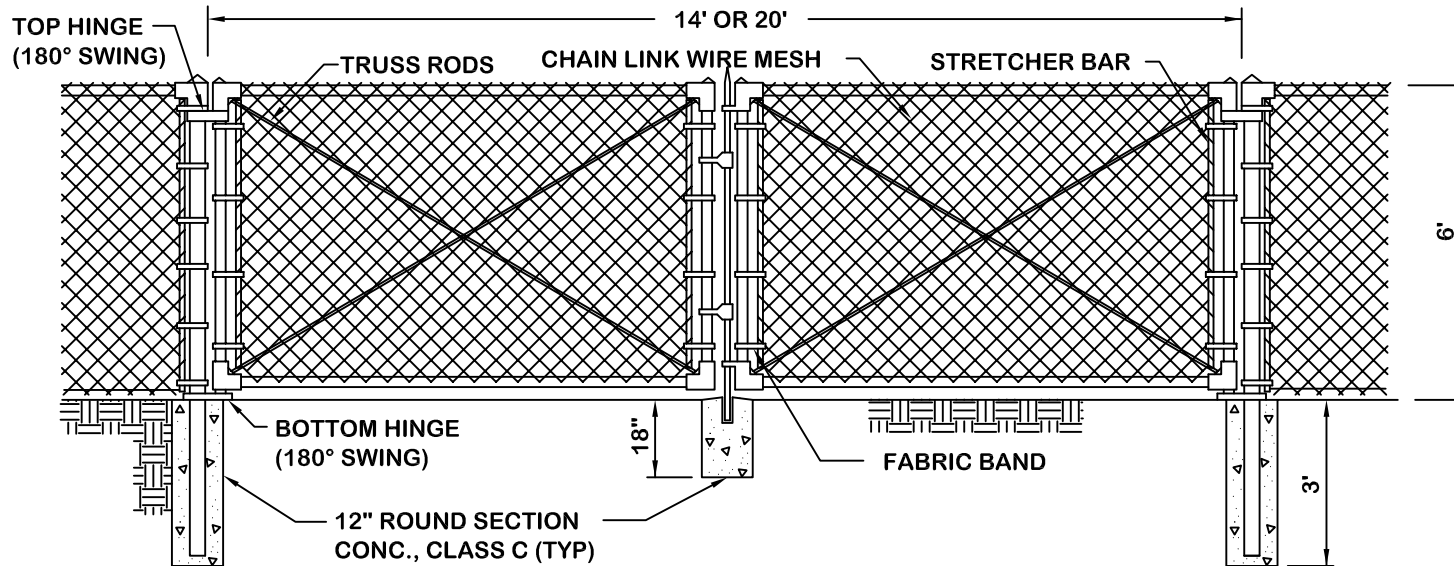
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CITY ENGINEER

11/20/2016  
DATE

**CHAIN LINK FENCE**

STANDARD PLAN NO. SW-096



**NOTES:**

1. FENCE FABRIC SHALL BE SECURED TO GATE FRAMES WITH KNUCKLED SELVAGE ALONG TOP EDGE.
2. MINIMUM POST LENGTH: 8'-8"
3. PROVIDE LOCKING MECHANISM (PADLOCK BY CITY)
4. BARBED WIRE TO BE PLACED ON TOP AS DIRECTED.
5. ALL CHAIN LINK SHALL BE BLACK VINYL



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**CHAIN LINK GATES**

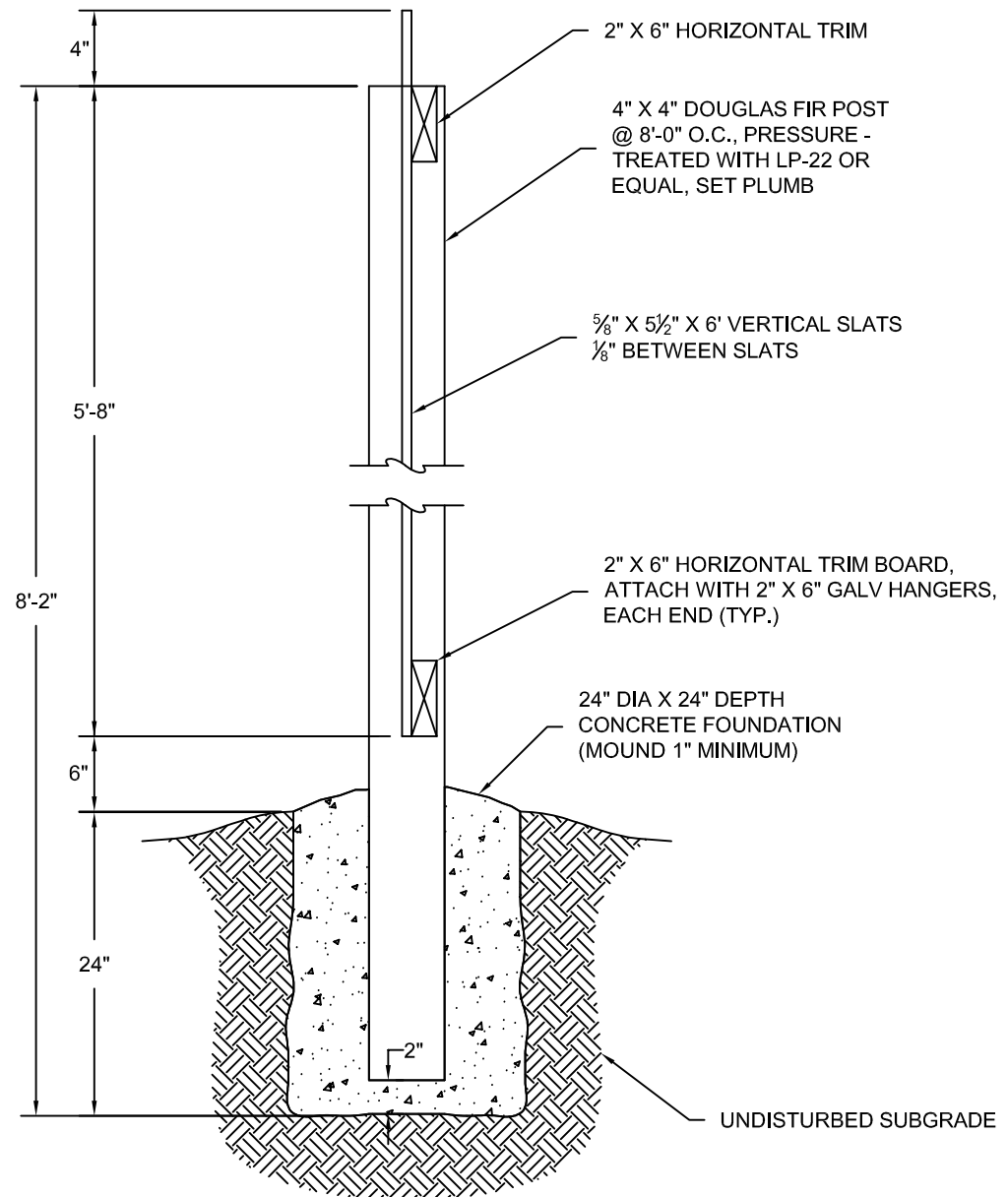
STANDARD PLAN NO.

SW-097



# NOTES

1. ALL WOOD TO BE WESTERN RED CEDAR GRADE 'B' OR BETTER UNLESS OTHERWISE INDICATED.
2. FASTEN ALL MATERIALS WITH 10d GALVANIZED NAILS UNLESS OTHERWISE INDICATED.



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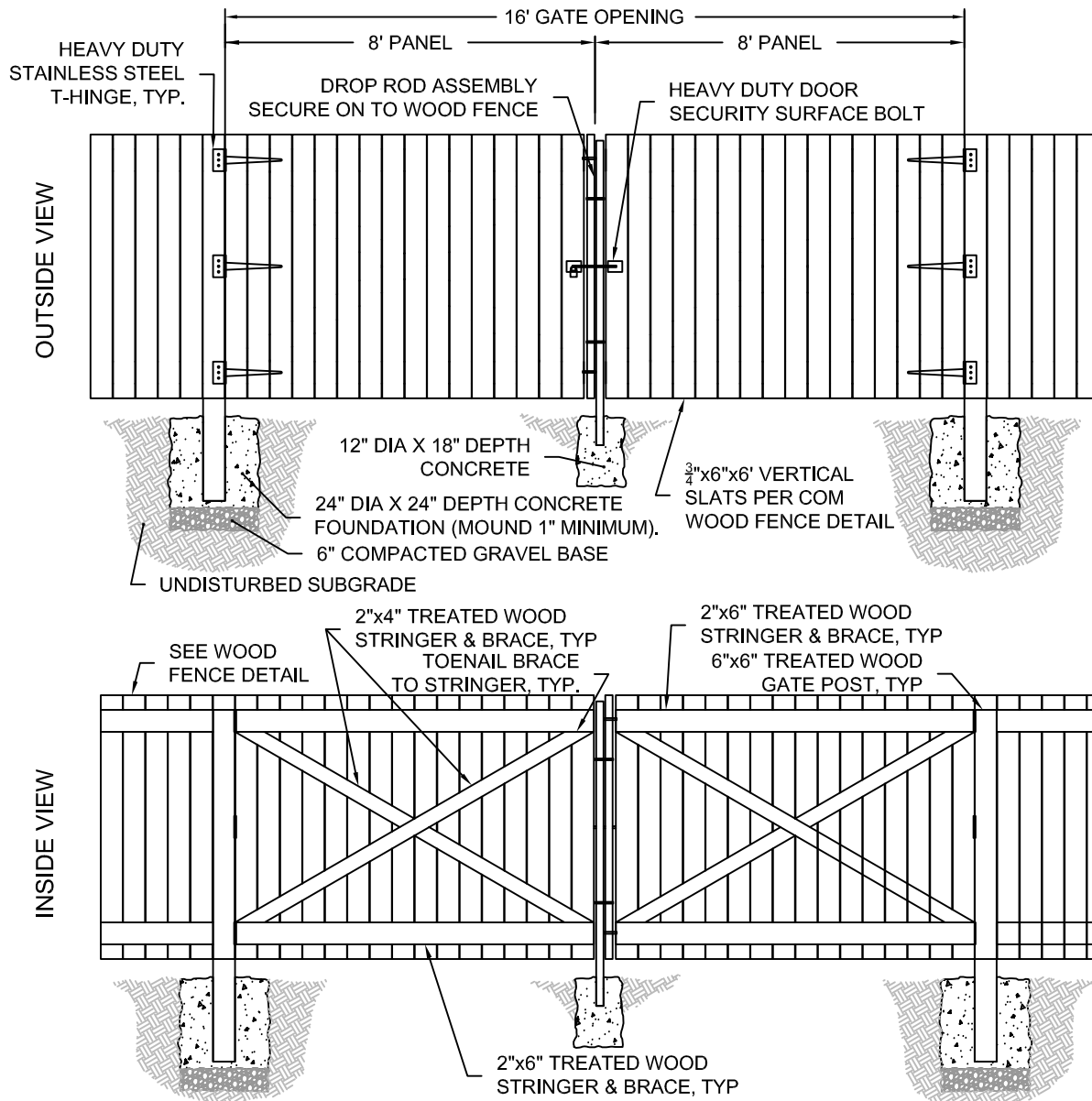
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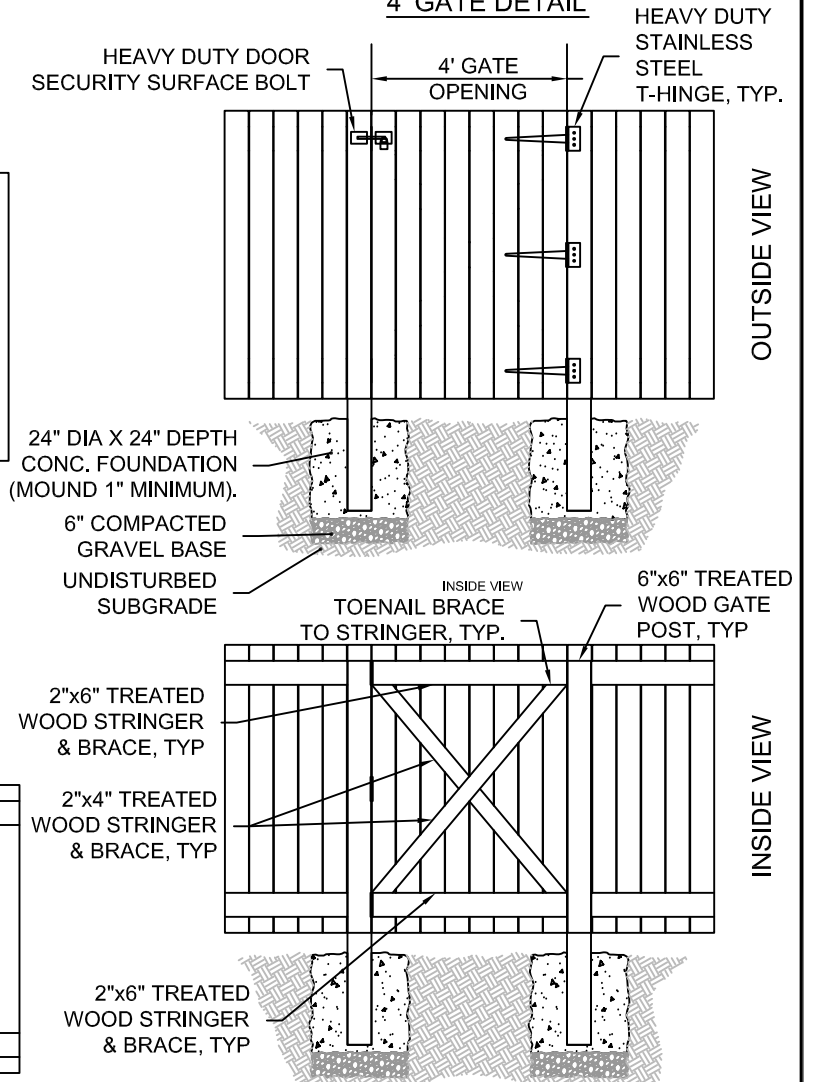
WOOD  
FENCE  
DETAIL

STANDARD PLAN NO. SW-098

### 16' GATE DETAIL



### 4' GATE DETAIL



#### NOTES:

1. ALL WOOD TO BE WESTERN RED CEDAR GRADE 'B' OR BETTER UNLESS OTHERWISE INDICATED.
2. FASTEN ALL MATERIALS WITH 10D GALVANIZED NAILS UNLESS OTHERWISE INDICATED.



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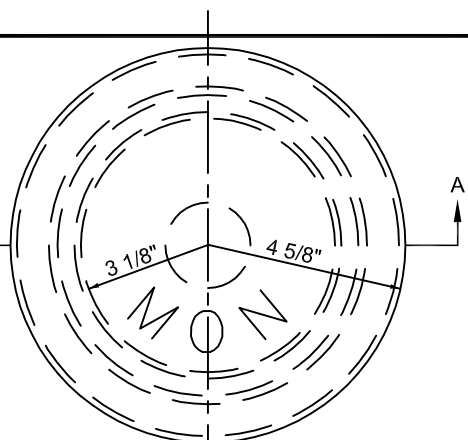
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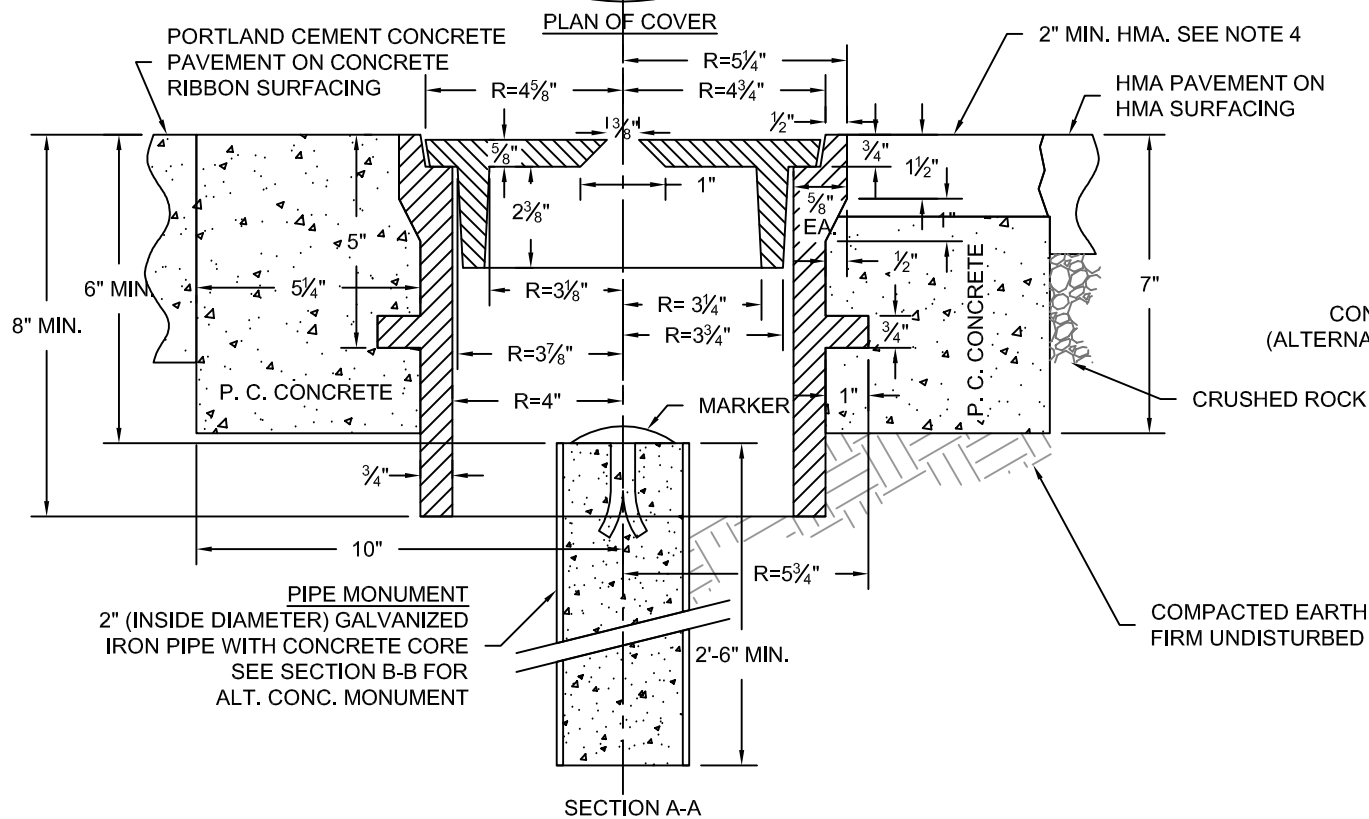
WOOD  
GATE  
DETAIL

STANDARD PLAN NO. SW-099

SECTION OF LETTER



PLAN OF COVER

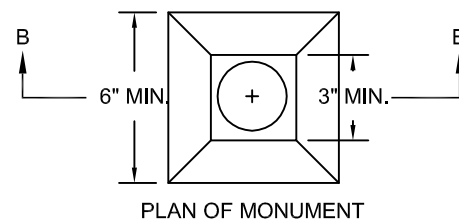


SECTION A-A

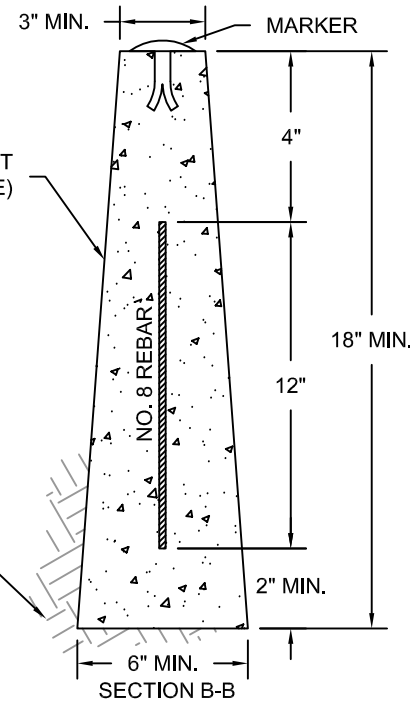
NOTES:

1. CASTINGS SHALL BE GRAY IRON ASTM A48, AASHTO M 105, CLASS 30
2. COVER AND SEAT SHALL BE MACHINED FOR PERFECT CONTACT AROUND CIRCUMFERENCE AND FULL WIDTH OF BEARING SURFACE
3. APPROXIMATE WEIGHTS, STANDARD

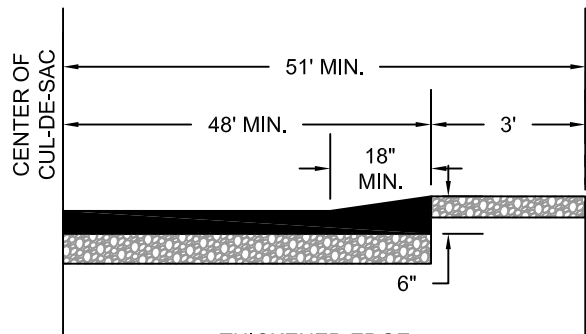
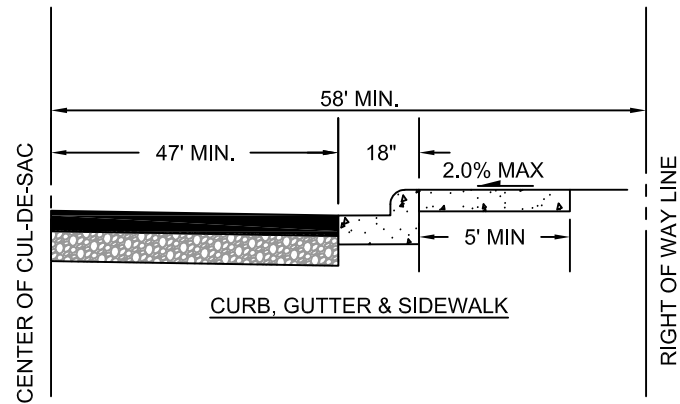
CASE	60 LBS
COVER	19 LBS
TOTAL	79 LBS
4. PAVEMENT SHALL BE HOT MIX ASPHALT (HMA) OR APPROVED SUBSTITUTE
5. CEMENT CONCRETE SHALL BE CLASS 4000



PLAN OF MONUMENT



SECTION B-B

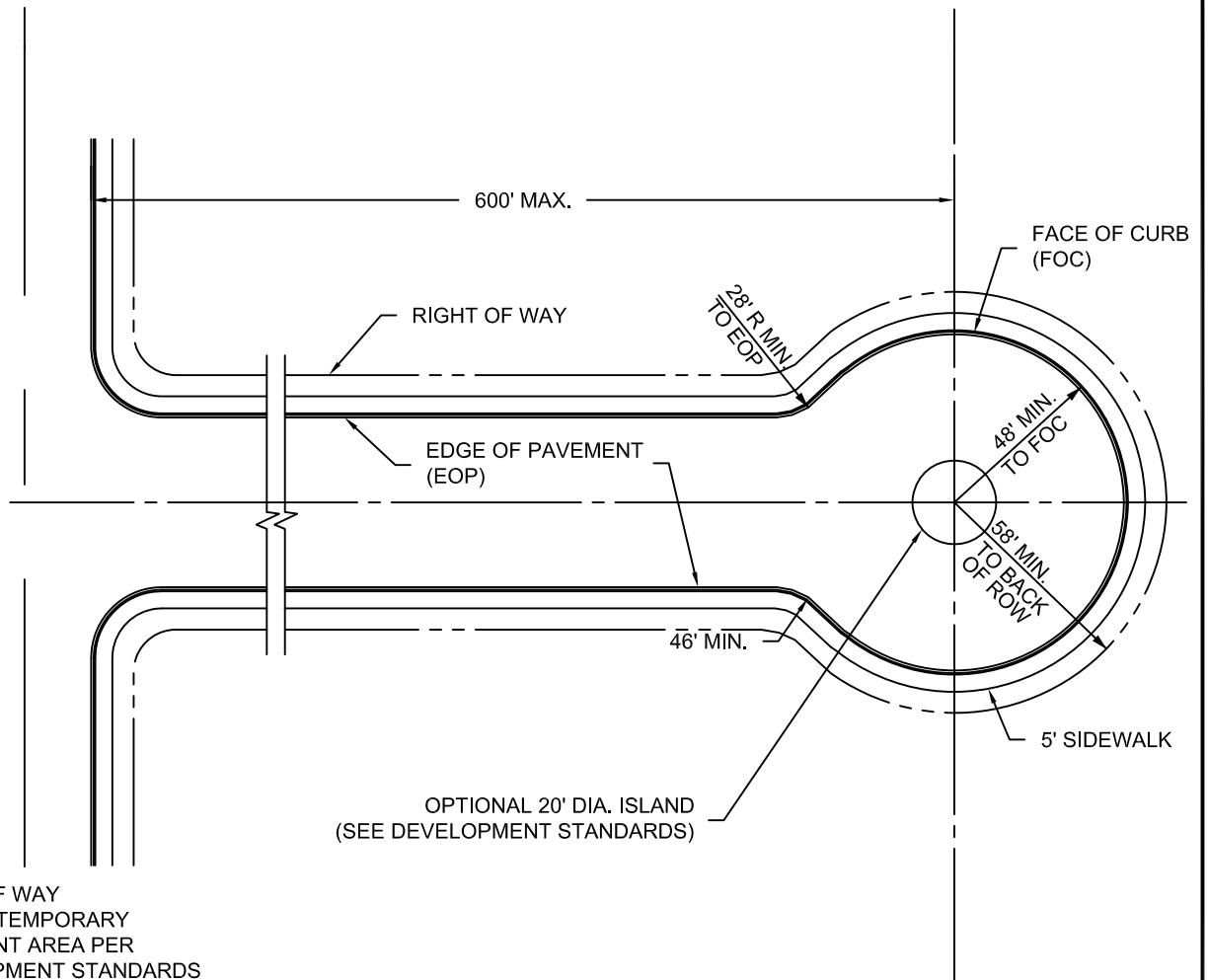


**THICKENED EDGE**  
(TEMPORARY CUL-DE-SAC ONLY)

RIGHT OF WAY  
LINE OR TEMPORARY  
EASEMENT AREA PER  
DEVELOPMENT STANDARDS

**NOTES:**

1. ALL PERMANENT CUL-DE-SACS SHALL BE CONSTRUCTED WITH CEMENT CONCRETE CURB, GUTTER AND SIDEWALK
2. REFER TO SECTION 4.7.7 OF THE DEVELOPMENT STANDARDS FOR ADDITIONAL INFORMATION
3. THE CUL-DE-SAC SHALL BE MARKED AS A FIRE LANE AND POSTED WITH NO PARKING SIGNS



**REVISION  
DATE**

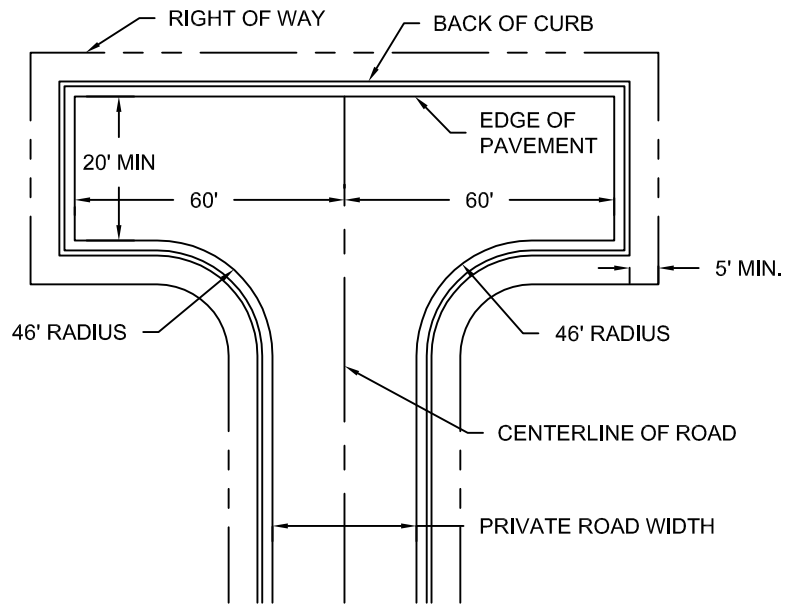
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DATE

**APPROVED FOR PUBLICATION**

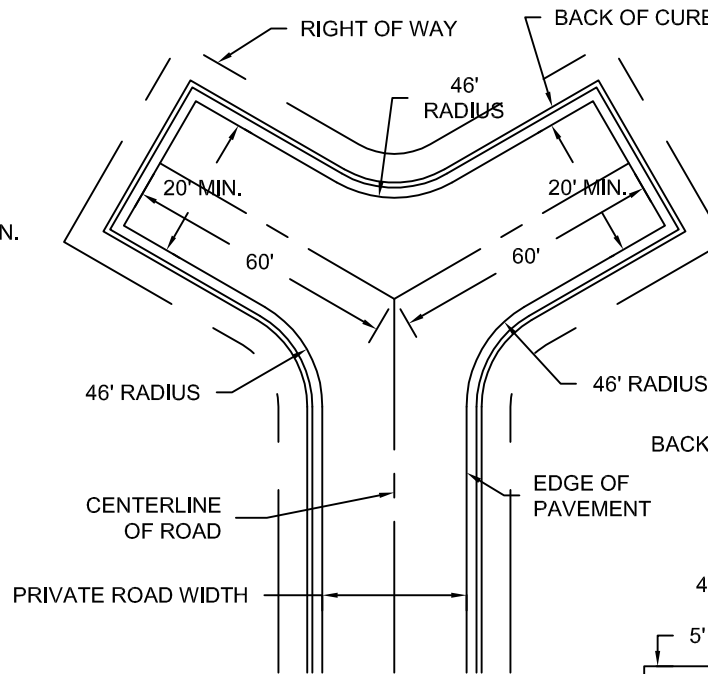
*[Signature]* 07/08/2019  
CITY ENGINEER DATE

**CUL-DE-SAC  
DETAIL**

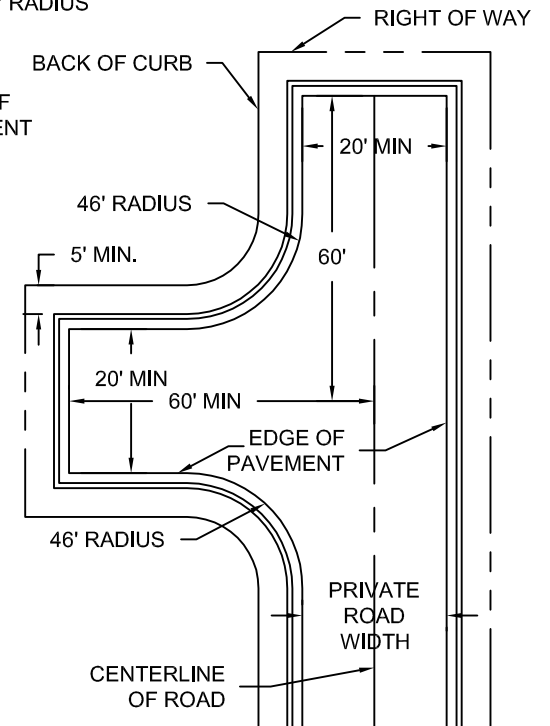
**STANDARD PLAN NO. TR-002**



**TYPE 1**



**TYPE 2**



**TYPE 3**

**NOTES:**

1. THIS STANDARD MAY BE USED ON PRIVATE ROADS WHICH SERVE FOUR OR FEWER SINGLE-FAMILY RESIDENTIAL UNITS.
2. ALL DIMENSIONS ARE MINIMUM PAVEMENT REQUIREMENTS.
3. THE TURNAROUND SHALL BE MARKED AS A FIRE LANE AND POSTED WITH NO PARKING SIGNS.
4. RIGHT-OF-WAY SHALL EXTEND A MINIMUM OF 5 FEET BEHIND BACK OF CURB
5. ALL PERMANENT HAMMERHEAD TURNAROUNDS SHALL BE CONSTRUCTED WITH CEMENT CONCRETE CURB AND GUTTER



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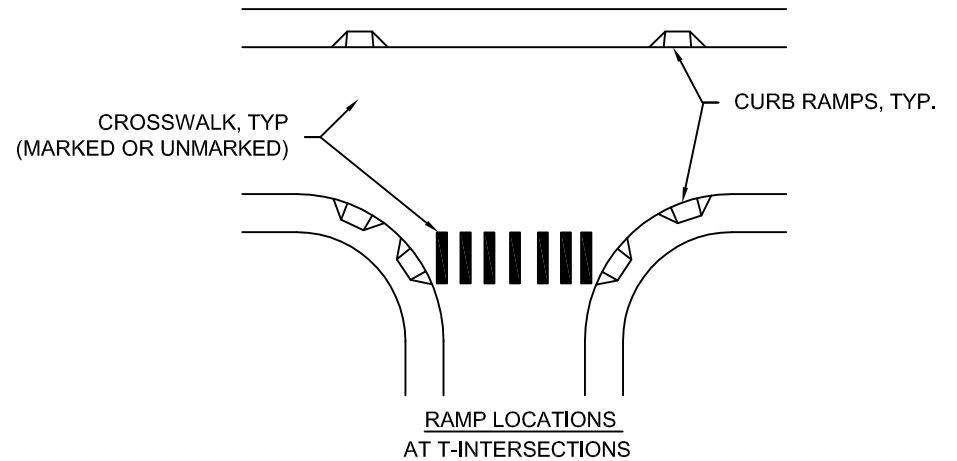
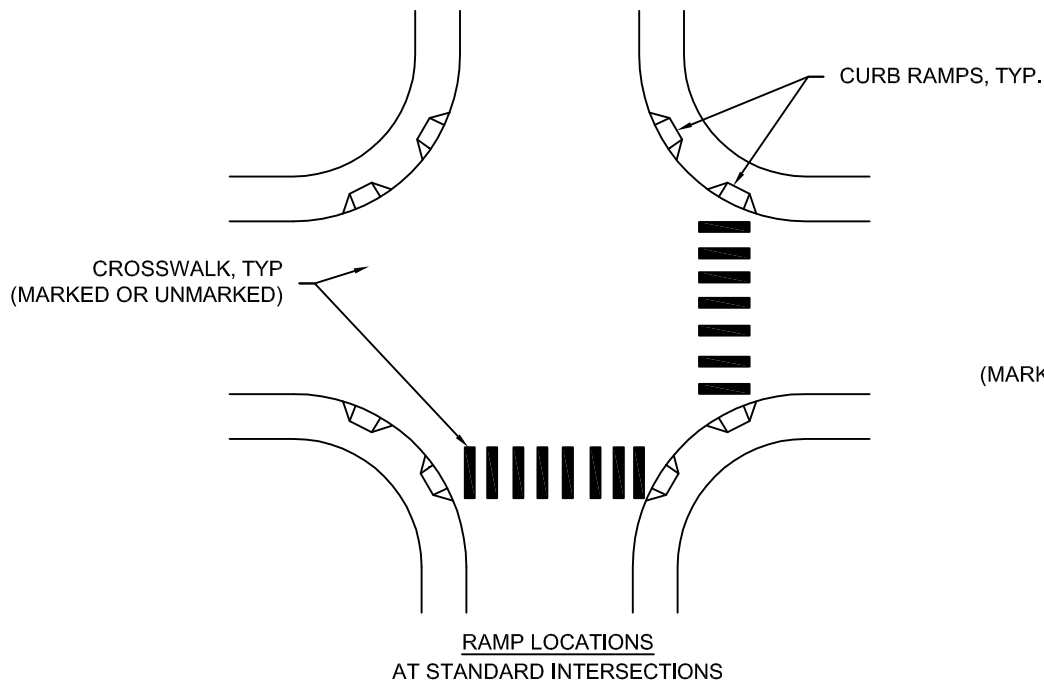
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CITY ENGINEER

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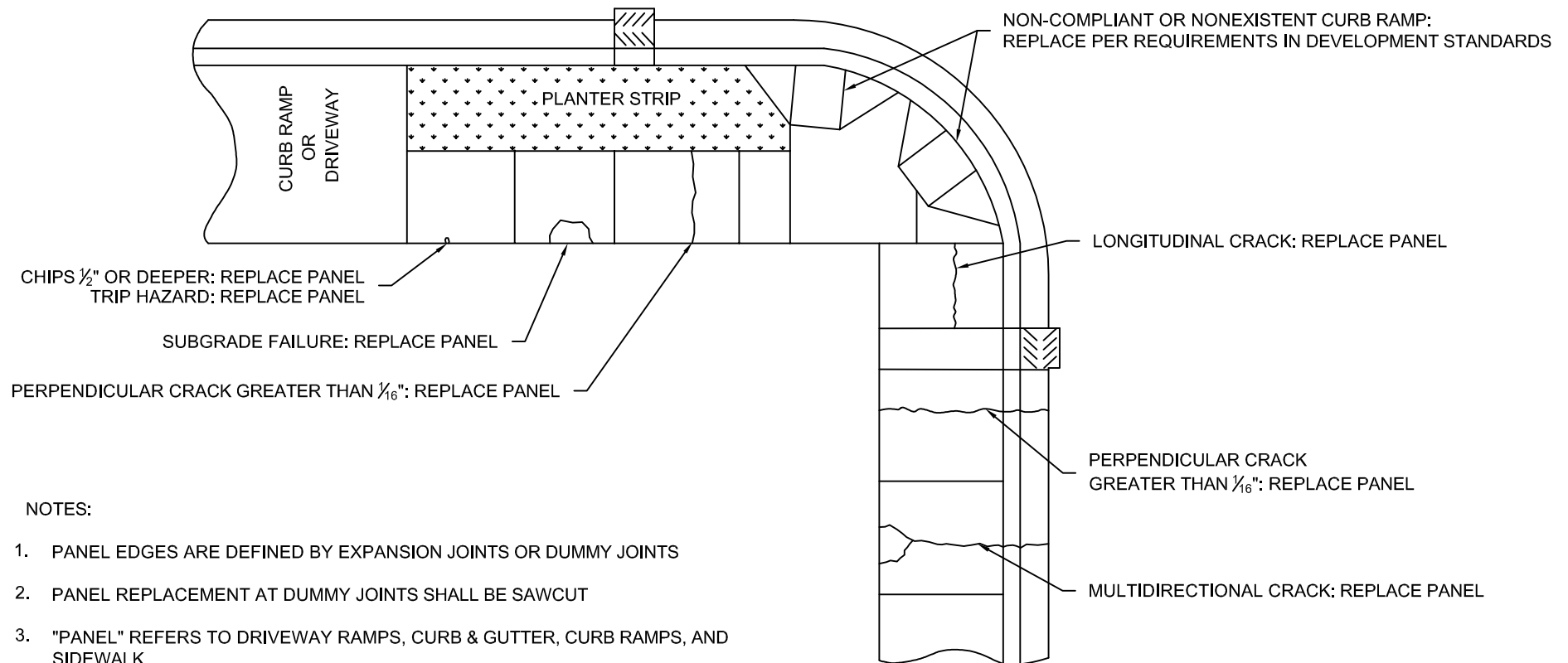
**PRIVATE ROAD  
HAMMERHEAD  
TURNAROUND**

**STANDARD PLAN NO. TR-003**



**NOTES:**

1. CURB RAMPS SHALL BE DESIGNED AND CONSTRUCTED TO MEET THE ADA STANDARDS FOR ACCESSIBLE DESIGN, THE 2011 PROPOSED ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT-OF-WAY (2011 PROWAG), AND WSDOT STANDARD PLANS
2. THE MINIMUM SIZE OF A CURB RAMP TURNING SPACE SHALL BE 5 FT X 5 FT
3. CURB RAMPS SHALL BE LOCATED TO AVOID EXISTING AND PROPOSED UTILITIES WITHIN THE FOOTPRINT OF THE CURB RAMP TO THE MAXIMUM EXTENT FEASIBLE
4. CATCH BASINS AND INLETS SHALL BE LOCATED OUTSIDE THE CURB RAMP CLEAR SPACE TO THE MAXIMUM EXTENT FEASIBLE
5. CROSSWALKS MAY BE MARKED OR UNMARKED
6. A RECEIVING RAMP SHALL BE CONSTRUCTED ON THE OPPOSITE SIDE OF THE STREET IF ONE DOES NOT EXIST
7. TWO RAMPS SHALL BE CONSTRUCTED PER INTERSECTION CORNER UNLESS OTHERWISE APPROVED BY THE PUBLIC WORKS DIRECTOR



NOTES:

1. PANEL EDGES ARE DEFINED BY EXPANSION JOINTS OR DUMMY JOINTS
2. PANEL REPLACEMENT AT DUMMY JOINTS SHALL BE SAWCUT
3. "PANEL" REFERS TO DRIVEWAY RAMPS, CURB & GUTTER, CURB RAMPS, AND SIDEWALK
4. ALL PANELS THAT DO NOT MEET CURRENT ADA STANDARDS SHALL BE REPLACED TO MEET CURRENT ADA STANDARDS AND GUIDELINES
5. ANY PANEL THAT CONTAINS AN OFFSET GREATER THAN 1/4" OR A TRIP HAZARD AS DETERMINED BY THE PUBLIC WORKS DIRECTOR SHALL BE REPLACED



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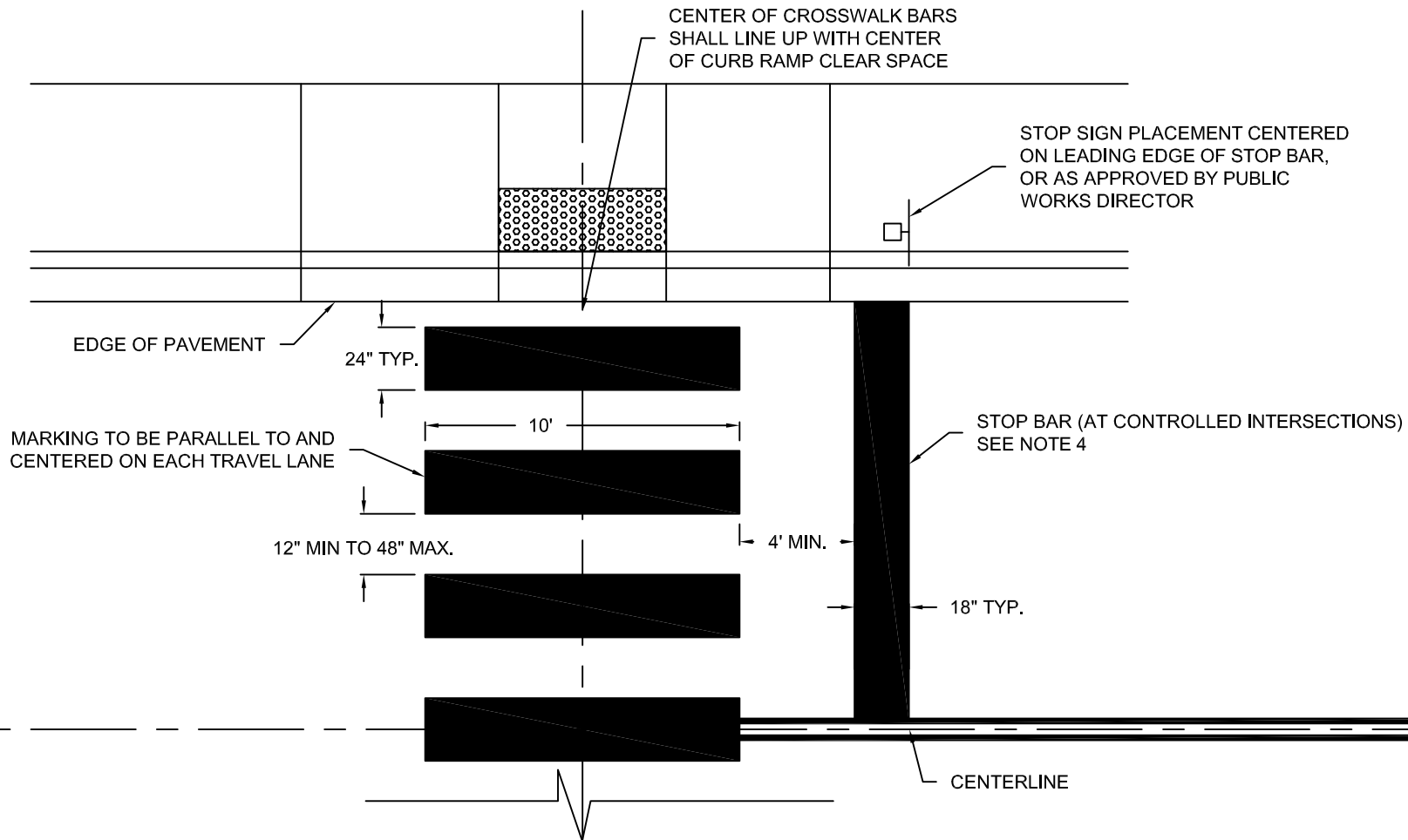
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CITY ENGINEER

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DATE

**CONCRETE  
REPLACEMENT  
REQUIREMENTS**

STANDARD PLAN NO. TR-005



NOTES:

1. ALL CROSSWALK AND STOP BAR MARKINGS SHALL BE THERMOPLASTIC
2. CROSSWALK MARKINGS SHALL BE SPACED TO AVOID PLACEMENT WITHIN WHEEL PATHS AND BIKE LANES
3. STOP BAR SHALL BE LOCATED A MINIMUM OF 4' IN ADVANCE OF CROSSWALK LINES AT CONTROLLED INTERSECTIONS PER MUTCD
4. REFER TO MUTCD FOR STOP BAR LOCATIONS AT UNCONTROLLED INTERSECTIONS AND MIDBLOCK SIGNALIZED LOCATIONS



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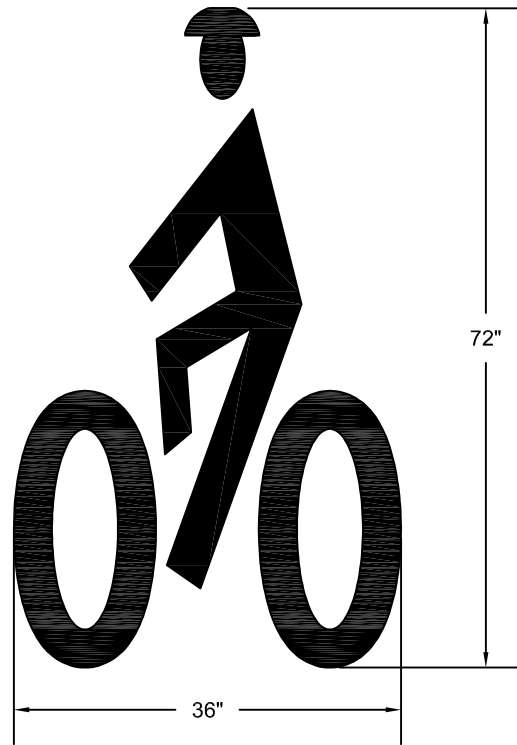
CROSSWALK  
AND STOP BAR  
PAVEMENT MARKINGS

STANDARD PLAN NO.

TR-006



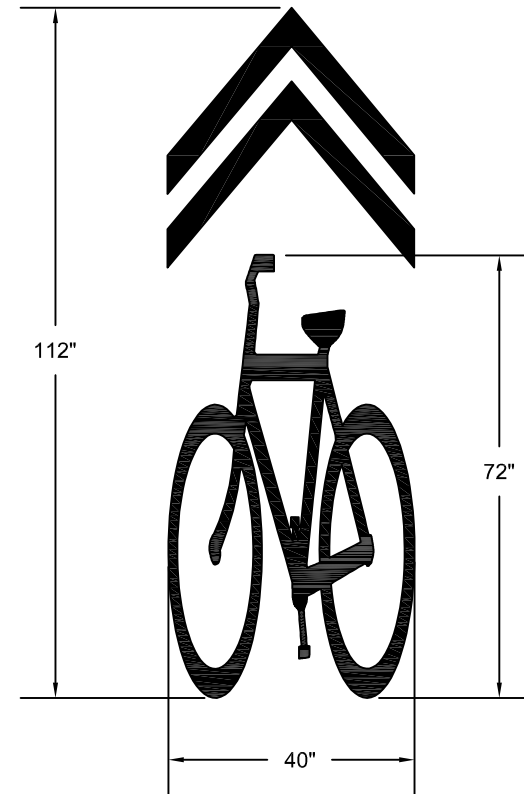
## BIKE LANE SYMBOL



### BIKE LANE NOTES:

1. MARKING SHALL BE HELMETED BICYCLIST SYMBOL PER MUTCD
2. ALL MARKINGS SHALL CONSIST OF WHITE PAINT
3. SYMBOL SHALL BE PLACED BEFORE AND AFTER MAJOR INTERSECTIONS AND EVERY 500 TO 1000 FEET
4. SEE MUTCD FOR ADDITIONAL INFORMATION AND BIKE LANE TREATMENTS

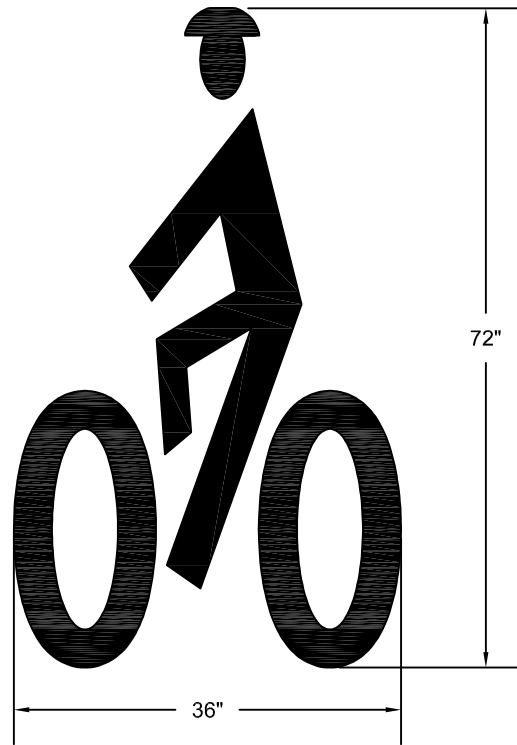
## SHARED LANE SYMBOL



### SHARED LANE NOTES:

1. MARKING SHALL BE LOCATED TO AVOID PLACEMENT WITHIN WHEEL PATHS
2. ALL MARKINGS SHALL CONSIST OF WHITE THERMOPLASTIC OR PAINT AS DETERMINED BY THE PUBLIC WORKS DIRECTOR.
3. SYMBOL SHALL BE PLACED IMMEDIATELY AFTER INTERSECTIONS AND AT INTERVALS NOT GREATER THAN 250 FEET THEREAFTER
4. SEE MUTCD FOR ADDITIONAL INFORMATION ON SHARED LANE MARKINGS AND PLACEMENT

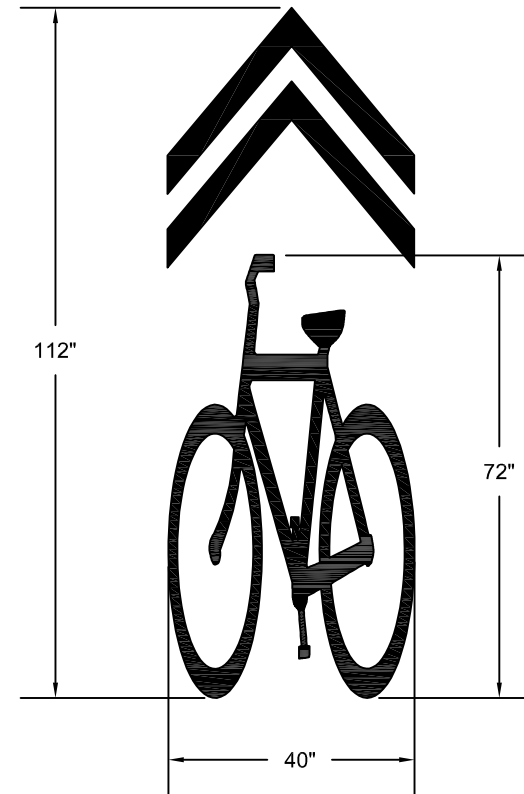
## BIKE LANE SYMBOL



### BIKE LANE NOTES:

1. MARKING SHALL BE HELMETED BICYCLIST SYMBOL PER MUTCD
2. ALL MARKINGS SHALL CONSIST OF WHITE PAINT
3. SYMBOL SHALL BE PLACED BEFORE AND AFTER MAJOR INTERSECTIONS AND EVERY 500 TO 1000 FEET
4. SEE MUTCD FOR ADDITIONAL INFORMATION AND BIKE LANE TREATMENTS

## SHARED LANE SYMBOL



### SHARED LANE NOTES:

1. MARKING SHALL BE LOCATED TO AVOID PLACEMENT WITHIN WHEEL PATHS
2. ALL MARKINGS SHALL CONSIST OF WHITE THERMOPLASTIC OR PAINT AS DETERMINED BY THE PUBLIC WORKS DIRECTOR.
3. SYMBOL SHALL BE PLACED IMMEDIATELY AFTER INTERSECTIONS AND AT INTERVALS NOT GREATER THAN 250 FEET THEREAFTER
4. SEE MUTCD FOR ADDITIONAL INFORMATION ON SHARED LANE MARKINGS AND PLACEMENT

# Appendix B – Construction Notes

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These General Notes shall appear on all Civil plan sets, as they may apply to a project.

## **B.1 General Notes**

1. All work and materials shall be in accordance with current City of Mukilteo Development Standards; the current edition of the Washington State Department of Transportation Standard Specifications for Road, Bridge, and Municipal Construction; and the adopted edition of the Washington State Department of Ecology Stormwater Management Manual for Western Washington.
2. All work within the plat and City right-of-way shall be subject to the inspection of the City.
3. Prior to any site construction including clearing/logging or grading, the site clearing limits shall be located and field identified by the project surveyor (or project engineer) as required by these plans. The project surveyor's name and phone number is \_\_\_\_\_.
4. The developer, contractor and project engineer is responsible for water quality as determined by the monitoring program established by the project engineer. The project engineer's name and phone number is \_\_\_\_\_.
5. Prior to any site work, the contractor shall contact the City of Mukilteo Community Development Department at 425-263-8000 to schedule a preconstruction conference.
6. Engineered as-built drawings in accordance with the current adopted International Building Code shall be required prior to final site approval.
7. The contractor shall be responsible for obtaining all permits for utility, road, and right-of-way construction. The contractor for this project is \_\_\_\_\_.

Contact person: \_\_\_\_\_

Phone: \_\_\_\_\_

Mobile: \_\_\_\_\_

24-Hour Emergency Contact and Phone: \_\_\_\_\_

8. The Construction Stormwater Pollution Prevention (SWPP) facilities shall be constructed in accordance with the approved SWPPP plans prior to any grading or land clearing. These facilities must be satisfactorily maintained until construction and landscaping is completed and the potential for on-site erosion has passed. Sediment laden waters shall not enter the natural drainage system.
9. A Certified Erosion and Sediment Control Lead (CESCL) or SWPPP Supervisor shall be responsible for maintaining the Construction SWPP facilities, as outlined in the approved

SWPPP, or as modified from time to time. Contact information for the CESCL (or SWPPP Supervisor) for the project shall be given to the City.

10. Noncompliance with the requirements for erosion controls, water quality and clearing limits may result in revocation of project permits, plan approval, and bond foreclosures.
11. Trench backfill of new utilities and storm drainage facilities shall be compacted to 95% maximum density (modified proctor) under roadways and 90% maximum density (modified proctor) off roadways. Compaction shall be performed in accordance with Sections 7-08.3(3) and 2-03.3(14) D of the WSDOT Standard Specifications.
12. The owner and contractor shall be responsible for locating and protecting all existing utilities prior to beginning construction. Location of utilities shown on construction plans are based on best records available and are subject to variation. For assistance in utility location, call 811.
13. Prior to construction the owner and/or contractor shall notify the project engineer and the Public Works Director when conflicts exist between the plans and field conditions. Conflicts shall be resolved (including plan and profile revisions) and resubmitted for approval prior to proceeding with construction.
14. The contractor shall keep two sets of plans on site at all times for recording as-built information; one set shall be submitted to the project engineer, and one set shall be submitted to the City at completion of construction and prior to final acceptance of work.
15. A grading permit issued pursuant to the current adopted International Building Code, and approval of the temporary erosion and sedimentation control plan shall be obtained from the Community Development Department prior to any on-site grading work not expressly exempt by the current adopted International Building Code.

## **B.2        *Site Grading and Construction SWPPP Notes***

1. Prior to any site work, including clearing, logging or grading, the site clearing limits shall be located and field identified by the project surveyor (or project engineer) as required by these plans. The project surveyor's name and phone number is \_\_\_\_\_.
2. Soils in Mukilteo often contain finer particles which will pass through sediment traps untreated and have extremely long settling times. Therefore, the need to control erosion from the site is the first priority and should be emphasized.
3. The Construction Stormwater Pollution Prevention facilities shall be constructed in accordance with the approved SWPPP prior to any grading or extensive land clearing. An inspection by the City of these facilities shall be arranged for by the contractor prior to any grading. These facilities must be satisfactorily maintained until construction and landscaping is completed and the potential for on-site erosion has passed.
4. Stockpiles are to be located in safe areas and adequately protected by temporary seeding and mulching. Hydroseeding is preferred.

5. The developer (or project engineer) is responsible for water quality as determined by the monitoring program established by the project engineer. The project engineer's name and phone number is \_\_\_\_\_.
6. If the project will disturb more than one (1) acre of land, then a Construction NPDES Permit is required and a Certified Erosion and Sediment Control Lead (CESCL) shall be assigned to the site. The CESCL's name, phone number, and CESCL certificate number is \_\_\_\_\_.
7. All site work must be performed in accordance with the current City adopted International Building Code.
8. All earth work shall be performed in accordance with City Standards. A preconstruction soils investigation may be required to evaluate soils stability.
9. If cut and fill slopes exceed a maximum of two feet horizontal to one foot vertical, a rock or concrete retaining wall may be required. All rock retaining walls greater than four (4) feet in height are to be designed and certified by a professional engineer experienced in soil mechanics.
10. The surface of all slopes shall be compacted. This may be accomplished by over-building the slopes, then cutting back to final grades; or by compacting each lift as the slope is being constructed. All slopes shall be compacted by the end of each working day.
11. All structural fills shall be compacted to a minimum of 95% maximum density in the upper 4 feet & 90% maximum density below 4 feet as determined by modified proctor.
12. Noncompliance with the erosion control requirements, water quality requirements and clearing limits violations may result in revocation of project permits and plan approval and bond foreclosures.
13. Upon completion of work, final reports must be submitted to the City in conformance with the current City adopted International Building Code.
14. A Wet Weather Erosion Control Plan must be submitted to the City for review and approval on or before September 1, if the project is proposing to actively clear, grade, or otherwise disturb 1,000 square feet or more of soil during the period between October 1 and April 30. Other thresholds for a Wet Weather Erosion Control Plan include projects that:
  - a. Have area(s) that drain, by pipe, open ditch, sheet flow, or a combination of these to a tributary water, and the tributary water is one-quarter mile or less downstream; or
  - b. Have slopes steeper than 15 percent adjacent or on-site; or
  - c. Have high potential for sediment transport, as determined by the Construction Site Sediment Transport Potential Worksheet; or
  - d. Have a critical area or critical area buffer on-site, or within 50 feet of the site; or
  - e. Have high groundwater table or springs.

### ***B.3 Temporary Seeding General Notes***

1. Use seeding throughout the project on disturbed areas that have reached final grade or that will remain unworked for more than 30 days.
2. The optimum seeding windows are April 1 through June 30 and September 1 through October 1.
3. Between October 1 and March 30 seeding requires a cover of mulch with straw or an erosion control blanket until 75 percent grass cover is established.
4. Review all disturbed areas in late August to early September and complete all seeding by the end of September.
  - a. Mulch is required at all times for seeding. Mulch can be applied on top of the seed or simultaneously by hydroseeding (see Ecology BMP C121 Mulching for specifications).
  - b. Seed and mulch all disturbed areas not otherwise vegetated at final site stabilization.

### ***B.4 Maintenance of Siltation Barriers***

1. Siltation barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Close attention shall be paid to the repair of damaged erosion control elements, especially end-runs and sediment build-up. Necessary repairs to barriers shall be accomplished the same day.
2. Sediment deposits should be removed after each rainfall. Sediment deposits must be removed when the sediment level reaches approximately one-half the siltation barrier height.
3. Any sediment deposits remaining in place after the check dam is no longer required shall be dressed to conform to the existing grade, prepared and seeded.

### ***B.5 Sediment Trap General Notes***

1. Sediment traps are only effective in removing sediment down to about the medium silt size fraction. Soils in Mukilteo often contain fine silt and may not be adequately treated with sediment ponds. Therefore, erosion control practices should be emphasized and prioritized.
2. The pond shall be checked after each rain event, or weekly, whichever is sooner, to insure that it the walls are structurally sound, the pond has not been damaged by erosion or construction equipment, and to determine maintenance needs.
3. Any damage to the pond embankments or slopes shall be repaired immediately.
4. The emergency spillway should be checked regularly to insure that the lining is well established and erosion resistant. The siltation basin should be checked for sediment cleanout after each rainfall which produces runoff.

5. When the sediment reaches the cleanout level (typically 1-foot in depth), it shall be removed and properly disposed of off-site.
6. Secondary treatment may be necessary if the sediment pond cannot effectively remove the fine grain soils.

#### ***B.6 Storm Drainage General Notes***

1. All pipe shall be placed according Division 7 of the WSDOT Standard Specifications.
2. Backfill shall be placed equally on both sides of the pipe or pipe-arch in 6" average depth loose lifts. Maximum lift depth shall not exceed 9". Each lift shall be thoroughly compacted. Compacted lifts must extend at least one pipe diameter on each side of the pipe or to the side of the trench. Backfill over the pipe shall be performed in accordance with Sections 7-08.3(3) the WSDOT Standard Specifications.
3. All grates located in the gutter flow line (inlet and catch basin) shall be depressed 0.1 feet below pavement level.
4. All catch basins are to be Type I unless otherwise approved by the City or designated representative. The use and installation of inlets is not allowed.
5. The contractor shall be responsible for adjusting all manhole, inlet and catch basin frames and grates to grade just prior to curb installation and/or paving.
6. All catch basins with a depth of 5 feet or greater to the flow line shall be Type II catch basins.
7. Vaned grates are required on all storm structures. All catch basins and manholes shall have locking lids. Rolled grates are not approved for use.
8. Polypropylene safety steps and ladder steps shall be provided in all manholes and shall be positioned correctly with the bolt areas on the rim.
9. Catch basin frames and grates shall be Olympic Foundry Model SM60, SM52, or SM44, locking type or equivalent. Model SM52 shall be referred to as a "Through Curb Inlet" on the plans.
10. Detention ponds with side slopes steeper than 3:1 or with a maximum water depth greater than 3 feet shall require a vinyl coated chain link perimeter fence. Side slope averaging shall not be allowed. All inlet and outfall pipes shall have a trash rack installed and a mortared riprap headwall.
11. Prior to sidewalk construction; lot drainage systems, stub-outs and any behind sidewalk drains must be installed as required. Pipe shall be PVC 3034, or SDR-35. Stub-outs shall be marked with a 2" x 4" with 3 feet visible above grade and marked "storm". Locations of these installations shall be shown on the as-built construction plans submitted to the City.

12. Storm water retention/detention facilities, storm drainage pipe and catch basins shall be flushed and cleaned by the developer prior to:
  - a. City of Mukilteo final acceptance of the project and;
  - b. Upon commencement and completion of the 2 year warranty period for the storm drainage system. An invoice detailing the flushing and cleaning shall be provided to the City.
13. All pipes shall be installed with rubber gaskets as per manufacturer's recommendations.
14. Corrugated Polyethylene Pipe (CPP):
  - a. All pipe shall be smooth interior. CPP shall be double-walled. All pipe shall meet AASHTO and ASTM specifications.
  - b. Upon request by the City inspector, all pipe runs shall pass the low pressure air test requirements of Section 7-04.3(1) E & F of the WSDOT Standard Specifications for Road, Bridge, and Municipal Construction. Pipe runs shall be tested with pipe loaded and compacted to finish grade.
  - c. Upon request by the City inspector, pipe shall be subject to mandrel testing (mandrel size = 90% of nominal pipe diameter).
  - d. Pipe shall be stored on site in shipping bunks on a flat level surface. This requirement will be strictly enforced; failure to comply may result in rejection of the pipe and/or future restriction on use of material.
  - e. Minimum depth of cover shall be 2 feet.
  - f. Couplings shall be integral bell and spigot or double bell separate couplings. Split couplings will not be allowed.
  - g. Backfill shall comply with Section 7-08.3(3) of the WSDOT Standard Specifications for Road, Bridge, and Municipal Construction with the exception that the second paragraph of Section 7-08.3(3) is deleted and replaced with:

The material used for backfilling around and to a point 1 foot above the top of the pipe shall be clean earth or sand, free from clay. Any gravel or stones included in the backfill shall pass through a 1 inch sieve.
15. Culvert ends shall be beveled to match side slopes. Field cutting of culvert ends is permitted when approved by the City.
16. All field cut culvert pipe shall be treated as required in the Standard Specifications or General Special Provisions.



# Appendix C – Construction Plan Submittal Requirements

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All materials submitted for review shall comply with the all Standards as outlined in Section 1.4. Refer to Section 1.5 for Deviation and Variance Processes. Fees for review of construction plans will be charged as outlined in the City of Mukilteo Fee Schedule.

## ***C.1 Plan Set Compliance with other Documents***

Plans shall comply with the following reports and materials, as applicable:

- ☐ Preliminary Plat Map
- ☐ Roads and general lot layout must conform to the approved preliminary plat map
- ☐ Construction Plans shall comply with the Hearing Examiners Decision or Notice of Decision
- ☐ Preliminary Plat Approval Ordinance
- ☐ Stormwater Site Plan (Drainage Report)
- ☐ Geotechnical Report
- ☐ Wetland and Streams Report
- ☐ Transportation Impact Study
- ☐ Wildlife Habitat Report
- ☐ Archaeology Report
- ☐ Lot Line Adjustment

## ***C.2 Plan Sets shall meet these General Requirements for Format***

- ☐ **Paper size** – Sheet size shall be 24' x 36' unless otherwise requested by the City of Mukilteo
- ☐ **Scale** – 1:10 or 1:20 Engineering scale only, be consistent, and indicate your scale using a bar symbol (for plan reproduction integrity)
- ☐ **Title Block** – Include the following: project name, drawing title; sheet number and revision column, project address; and name, address, and phone number of the preparer
- ☐ **North Arrow** – Include on all site and site-related drawings
- ☐ **Legend** – Use APWA Standard Symbols or approved alternatives

- ☐ **Engineer's Stamp** – Stamped, signed and dated on all civil sheets
- ☐ **Sheet Index** – To be included on cover sheet
- ☐ **Legal Description** – To be included on the site plan
- ☐ **Easements** – Include easement(s) which are on or adjacent to the property, including but not limited to, utility, NGPA, and access. Include the Snohomish County recording number for existing easements.
- ☐ **Utilities** – Show the location of all utilities below and above ground. Use the best available information. Show existing and proposed water, sewer, and storm drainage systems.
- ☐ **Quantities** – Provide the following:
  - Cut volumes in cubic yards (depict locations considered for cut locations on grading plan sheet)
  - Fill volumes in cubic yards (depict locations considered for fill locations on grading plan sheet)
  - Total clearing to be performed in square feet
  - Total new and replaced hard surface in square feet
- ☐ **Contours/Elevations** – Horizontal and vertical datum or basis for elevation and the benchmark used for elevation control shall be NAD 83 Washington State Plane North and NAVD 88 datum only. Show proposed and existing contours at 2-foot intervals.
- ☐ **Critical Areas** – If you have critical areas on or adjacent to your site, contact the Community Development Department for more information at 425.263.8000.

### **C.3      *Plan Sets***

Depending on the scope of work, some items may not apply or may be combined. The City may require additional information if needed. If you have a question on required items, please call 425.263.8000 or stop by City Hall.

#### **Cover Sheet**

- ☐ Sheet Index
- ☐ May include vicinity map, legend, and general notes

#### **Site and Topographic Information**

- ☐ Location, identification and dimensions of all proposed and existing buildings and their uses.
- ☐ Dimensions of all property lines.
- ☐ Location of existing parking spaces, include traffic flow and all internal walkways.

- ☐ Location, size, description, and top and invert elevations of all utilities. Field locate all visible appurtenances and use the best available information for buried utilities.
- ☐ Edge of pavement or curbs, curb cuts, sidewalks, wheelchair ramps, landscape areas, pedestrian or bike paths, rockeries, retaining walls, fences, bridges, culverts, etc. Show all concrete, asphalt, or gravel surfaces.
- ☐ Spot elevations at 50-foot grid; significant grade breaks; property corners; building corners; top and bottom of all walls and rockeries; centerline, edge of pavement, and back of curb at 50-foot stations on all streets.
- ☐ If significant trees exist, identify on the plan as required by the Mukilteo Municipal Code Chapter 17.
- ☐ If critical areas exist on the site, identify their boundaries as required by the Mukilteo Municipal Code Chapter 17.

### **Grading Plan**

- ☐ Clearing limits
- ☐ Proposed tree retention and protection measures, and tree and vegetation planting details if no landscaping plan is required
- ☐ Show existing and proposed retaining walls and rockeries

### **Temporary Erosion and Sediment Control Plan**

- ☐ Must be designed in accordance with the Ecology Manual
- ☐ Indicate the locations of erosion and sediment control BMPs that are proposed in the Stormwater Pollution Prevention Plan (SWPPP)

### **Drainage Plan**

- ☐ Must be designed in accordance with the Ecology Manual
- ☐ Show existing stormwater drainage to and from the site; routes of existing flows, flows during construction, and future flows at all discharge points; and the length of travel from the farthest upstream end of a proposed storm drainage system to any proposed flow control and treatment facility.
- ☐ A profile of each storm drain, catch basin, manhole, or culvert must be shown in its entirety.
- ☐ Spot elevations at 50-foot grid; significant grade breaks; property corners; building corners; top and bottom of all walls and rockeries, retaining walls, fences, bridges, culverts, etc. Show all concrete, asphalt, or gravel-paved surfaces.
- ☐ Catch basins/manholes
  - ☐ Station and offset at each
  - ☐ Numbered

- Type designation
- Rim and invert elevation
- Size, type, slope, and length of pipe
- Details for water quality and flow control features
- Emergency overflow location and elevation

### **Roads and Transportation Plan**

- Existing limits and the centerline of the right of way, show pavement width. Show existing and proposed curb, gutter, sidewalk, curb ramps, planter strip, street trees, poles (street light, power, cable, traffic signal), street signs, vaults, traffic signal interconnect cabinets, contractor cabinets, transit stops and shelters.
- Show roadway profiles and cross sections (with pavement specifications for proposed roadways).
- Show proposed right of way locations, with dimensions.
- Show proposed frontage improvements.
- Show existing driveways on both sides of the street to 100 feet from the proposed access. Show streets parallel to the proposed access, if any, up to 150 feet from the proposed access. Show existing and proposed street channelization and access easements (non-motorized and vehicle).

### **Temporary Traffic and Pedestrian Control Plan**

- Shall be designed in accordance with MUTCD and RCW 47.36

### **Landscaping Plan**

- Must be designed in accordance with the Soil Management Plan for the project
- As required by the Mukilteo Municipal Code Chapter 17

# Appendix D – Stormwater Site Plan and Submittal Requirements

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The process for developing the Stormwater Site Plan (SSP) shall meet Minimum Requirement #1 of the Ecology Manual. The Submittal Requirements contained herein outline the minimum contents to be addressed in the SSP. All items outlined must be addressed. If a section does not apply, the engineer may mark “N/A” with a brief explanation.

These Submittal Requirements are intended to aid the design engineer in preparing a Stormwater Site Plan. The City recommends the design engineer follow the order and structure of the checklist to facilitate review, which in turn will expedite permit issuance.

When the report requires revisions, the revisions must be submitted in a complete revised report.

Submit two copies of the bound, 8.5” x 11” report. Figures and drawings may be on larger paper. Stormwater Pollution Prevention Plans shall be submitted as stand-alone documents.

Use double-sided printing. Number each page.

## **Cover Sheet**

The Cover Sheet shall include:

- Project name, address, and parcel number;
- Applicant’s name, address, and telephone number;
- Engineering firm’s name, address, and contact information;
- Engineer’s name, license number, and stamp;
- Report date and revision dates.

## **Table of Contents**

Show the page number for each section of the report.

## **Chapter 1 - Project Overview**

The project overview is intended to provide a general description of the project. It must include a brief description of the following:

- ☐ Watershed which the project is in
- ☐ Downstream condition (within ¼ of mile of project), pre- and post-project

- ☐ Existing natural drainage system (to and from adjacent properties, including bypass)
- ☐ Pre-developed and post-developed site conditions
- ☐ Site area and project site area
- ☐ Pre-project and post-project land cover type and area
- ☐ Pre-developed and post-developed stormwater runoff conditions
- ☐ Proposed conveyance, flow control, and runoff treatment
- ☐ Current assessed value and cost of proposed improvements (for redevelopment projects)
- ☐ Address any unique or difficult site parameters
- ☐ Vicinity map which clearly locates the property, identifies all roads bordering the site, shows the route of stormwater off-site to the local natural receiving water, and shows significant geographic features and sensitive/critical areas (streams, wetlands, lakes, steep slopes, etc.).
- ☐ Reference appropriate Sections/Chapters/Appendices of the document for detailed descriptions.
- ☐ Identify other permits required (e.g. NPDES Construction Permit, hydraulic permits, Army Corps 404 permits, wetlands, BNSF right-of-way, etc.).
- ☐ A soils map should show the soils within the project site as verified by field testing. It is the designer's responsibility to ensure that the soil types of the site are properly identified and correctly used in the hydrologic analysis.

## **Chapter 2 – Discussion of Minimum Requirements**

Chapter 2 is intended as a checklist for the applicant and reviewer to verify that the applicable Minimum Requirements have been met within the project submittal.

- ☐ Discuss any other requirements from basin plans, critical areas, plat / short plat approvals, conditional use permits, SEPA mitigations, Developer Agreements, Notice of Decision documents, or other binding documents that may apply to the project. The specific document and page numbers shall be referenced in the discussion. Section 3.4.15 regarding regional ponds
- ☐ Discuss any engineering deviations and specific site conditions that affect design requirements. Discuss any assumptions used in the design.
- ☐ Show which Minimum Requirements apply to the project by clearly marking the decision path using the Ecology Manual's Figure 2.4.1 for New Development and Figure 2.4.2 for Redevelopment Projects.

- ☐ List the minimum requirements that apply to the project.
- ☐ Discuss how the project satisfies each minimum requirement.
- ☐ For Minimum Requirement #5, cite whether the project is using the list approach, or the LID Performance Criteria. If using the list approach, include the list and the specific infeasibility criteria that may apply (example below). Evidence must be shown that addresses the cited infeasibility criteria. For example, if citing low infiltration rates as the infeasibility criteria, then a measured infiltration rate shall be given, using results from an on-site infiltration test.

**Table D-1 – Example of Minimum Requirement #5 Criteria**

<b><i>BMPs</i></b>	<b><i>List #2 (Project triggers Minimum Requirements #1-9)</i></b>	<b><i>Infeasibility Criteria Cited and Evidence provided</i></b>
<b><i>Lawn &amp; Landscaped Areas:</i></b>	Post-Construction Soil Quality and Depth in accordance with BMP T5.13 in Chapter 5 of Volume V of the <i>SWMMWW</i>	
<b><i>Roofs:</i></b>	1. Full Dispersion in accordance with BMP T5.30 in Chapter 5 of Volume V of the <i>SWMMWW</i> , or Downspout Full Infiltration Systems in accordance with BMP T5.10A in Section 3.1.1 of Volume Ill of the <i>SWMMWW</i> .	
	2. Bioretention (See Chapter 7 of Volume V of the <i>SWMMWW</i> ) facilities that have a minimum horizontally projected surface area below the overflow which is at least 5% of the total surface area draining to it.	
	3. Downspout Dispersion Systems in accordance with BMP T5.10B in Section 3.1.2 of Volume Ill of the <i>SWMMWW</i> .	
	4. Perforated Stub-out Connections in accordance with BMP T5.10C in Section 3.1.3 of Volume Ill of the <i>SWMMWW</i> .	
<b><i>Other Hard Surfaces:</i></b>	1. Full Dispersion in accordance with BMP T5.30 in Chapter 5 of Volume V of the <i>SWMMWW</i> .	
	2. Permeable pavement <sup>1</sup> in accordance with BMP T5.15 in Chapter 5 of Volume V of the <i>SWMMWW</i> .	
	3. Bioretention (See Chapter 7, Volume V of the <i>SWMMWW</i> ) facilities that have a minimum horizontally projected surface area below the overflow which is at least 5% of the total surface area draining to it.	
	4. Sheet Flow Dispersion in accordance with BMP T5.12, or Concentrated Flow Dispersion in accordance with BMP T5.11 in Chapter 5 of Volume V of the <i>SWMMWW</i> .	



### Chapter 3 - Site and Basin Existing Condition Summary

The Site and Basin Existing Condition Summary provides the baseline information necessary to preserve natural resources, identify opportunities for low impact development principles and BMPs, preserve areas most appropriate to evaporate, transpire, and infiltrate stormwater, and help to achieve the goal of maintaining or restoring predevelopment hydrologic conditions.

A. Include site visit dates, observations, and weather.

B. Summarize the results of a survey prepared by a registered land surveyor showing:

- ☐ Existing public and private development, including utility infrastructure on and adjacent to the site
- ☐ Minor hydrologic features, including seeps, springs, closed depression areas, drainage swales
- ☐ Major hydrologic features with a streams, wetland, and water body survey and classification report
- ☐ Locations of geologic sensitive or critical areas (i.e. vegetative buffers, wetlands, steep slopes, floodplains, geologic hazard areas, streams, creeks, ponds, ravines, springs, etc.).
- ☐ Topographic features that may act as natural stormwater storage, infiltration, or conveyance. Contour requirements for survey shall be two-foot contours.
- ☐ Land use and ground cover
- ☐ Natural and man-made drainage patterns
- ☐ Points of entry and exit for existing drainage to and from the site
- ☐ Any known historical drainage problems such as flooding, erosion, etc.
- ☐ Areas with high potential for erosion and sediment deposition
- ☐ Existing fuel tanks
- ☐ Groundwater wells on-site and within 100 feet of site
- ☐ Septic systems on-site and/or within 100 feet of the site
- ☐ Describe the 100-year flood hazard zone

C. Identify any specific requirements included in a basin plan for the area.

- D. Include references to relevant reports such as basin plans, flood studies, groundwater studies, wetland designations, sensitive area designations, environmental impact statements, environmental checklists, lake restoration plans, water quality reports, etc. Where such reports identify additional conditions for the project, state these conditions and describe any proposed mitigation measures.
- E. Summarize the soils report and explain how this information was used to utilize areas most appropriate to evaporate, transpire, and infiltrate stormwater, and achieve the goal of minimizing pre-development natural hydrologic conditions on the site. Information shall include:
- ☐ How the project minimizes the development envelope;
  - ☐ How the project minimizes impervious surfaces;
  - ☐ How the project minimizes native vegetation loss on the site;
  - ☐ How the project preserves native soils; and
  - ☐ Fulfills the requirement for on-site stormwater management to the extent feasible, based on specific site conditions.
  - ☐ Underlying soils on the site from on-site exploration
  - ☐ The results of saturated hydraulic conductivity (Ksat) testing, using small-scale Pilot Infiltration Tests (PIT). (Grain size analysis is not accepted)
  - ☐ The results of testing for a hydraulic restriction layer and the elevation of the layer (groundwater, soil layer with less than 0.3 in/hr Ksat (as tested), bedrock, etc.)
  - ☐ Presence of perched aquifers, aquitards and confined aquifers
  - ☐ Discussion of critical areas or geologic hazards where present

### **Chapter 3—Off-Site Analysis**

The City requires a qualitative discussion of the off-site upstream and downstream system for all projects that trigger Stormwater Minimum Requirements #1-9. Detailed calculations will be contained in Appendix B of the SSP. Volume 1, Chapter 2.6.2 of the Ecology Manual describes the Off-site Analysis.

The **qualitative analysis** shall include the following elements:

- ☐ Review all available plans, studies, maps pertaining to the off-site study area.

- ☐ Investigate the drainage system ¼ mile downstream from the project by site visit, including the following items:
  - ☐ Problems reported or observed during the resource review
  - ☐ Existing/potential constrictions or capacity deficiencies in the drainage system
  - ☐ Existing/potential flooding problems
  - ☐ Existing/potential overtopping, scouring, bank sloughing, or sedimentation
  - ☐ Significant destruction of aquatic habitat (e.g., siltation, stream incision)
  - ☐ Existing public and private easements through the project site and their corresponding widths
  - ☐ Qualitative data on features such as land use, impervious surface, topography, soils, presence of streams, and wetlands
  - ☐ Information on pipe sizes, channel characteristics and drainage structures
  - ☐ Verification of tributary drainage areas
  - ☐ Date and weather at the time of the inspection
- ☐ Describe the drainage system and its existing and predicted problems through observations, reports, and hydraulic modeling (as necessary). Describe all existing or potential problems as listed above (e.g. pooling water or erosion). The following information shall be provided for each existing or potential problem:
  - ☐ Magnitude of or damage caused by the problem
  - ☐ General frequency and duration
  - ☐ Return frequency of storm or flow when the problem occurs (may require quantitative analysis)
  - ☐ Water elevation when the problem occurs
  - ☐ Names and concerns of the parties involved
  - ☐ Current mitigation of the problem
  - ☐ Possible cause of the problem
  - ☐ Whether the project is likely to aggravate the problem or create a new one
  - ☐ Properly include off-site areas in drainage calculations.

## **Chapter 4 — Permanent Stormwater Control Plan**

Chapter 4 will contain the information used to select, size and locate permanent stormwater control BMPs for the project site and shall include the following:

### **A. Pre-Developed Site Hydrology**

- ☐ Provide a list of assumptions and site parameters for the pre-developed condition.
- ☐ Identify all sub-basins within, or flowing through, the site. Use consistent labeling for all sub-basins throughout figures, calculations and text.
- ☐ For each sub-basin, identify current land use, acreage, hydrologic soil group and land use to be modeled under pre-developed conditions.
- ☐ Summarize output data from the pre-developed condition.
- ☐ Include completed hydrologic calculations in Appendix A of the report.
- ☐ Provide model reports, showing all assumptions, comparing pre-and post- project runoff.

### **B. Developed Site Hydrology**

- ☐ Provide a list of assumptions and site parameters for the developed condition.
- ☐ Identify all sub-basins within, or flowing through, the site. Use consistent labeling for all sub-basins throughout figures, calculations and text.
- ☐ For each sub-basin, identify current land use, acreage, hydrologic soil group and land use to be modeled under developed conditions.
- ☐ Summarize output data from the developed condition.
- ☐ Include completed hydrologic calculations in Appendix A of the report.

### **C. Performance Goals and Standards**

- ☐ Indicate total acreage of hard and impervious surfaces, pollution-generating impervious and hard surfaces and pollution-generating pervious surfaces for each Threshold Discharge Area (TDA). (Lawn is a pollution generating pervious surface.)
- ☐ Include applicable decision criteria and thresholds with treatment and flow control requirements clearly identified and supported.

#### **D. Flow Control (where required)**

- ☐ Identify the sizing method used.
- ☐ Summarize model results.
- ☐ Describe proposed flow control system and appurtenances, including size, type and characteristics of storage facility and control structure.
- ☐ Provide a drawing of the flow control facility and its appurtenances
- ☐ Include Hydraulic Analysis Worksheet, calculations, and computer printouts (including stage storage tables) for the flow control system to be included in Appendix B of the report.

#### **E. Water Quality (where required)**

- ☐ Identify the sizing method used.
- ☐ Summarize model results.
- ☐ Identify treatment methods used, including size, type and characteristics of treatment facility and appurtenances.
- ☐ Provide a drawing of the treatment facility and its appurtenances, including:
  - ☐ Dimensions
  - ☐ Inlet/outlet sizes and elevations
  - ☐ Location of the facility on the project site
  - ☐ Appurtenances/fittings
- ☐ Calculations for the water quality design storm and facility sizing calculations must be included in Appendix A of the report.
- ☐ Where appropriate, include manufacturer's specifications in Appendix C of the report.

#### **F. Conveyance System Analysis and Design**

- ☐ Illustrate the proposed conveyance system on a project site plan, per the specifications in *Appendix C, Construction Plan Submittal Requirements*.
- ☐ Describe capacities, design flows and velocities for each reach.
- ☐ Include conveyance calculations in Appendix B of the report.

## **Chapter 6—Operation and Maintenance Manual**

The City adopts the Ecology Manual maintenance standards for most stormwater items. These standards shall be referenced, where they exist. Otherwise, the manufacturer's recommendations can be used.

The Operation and Maintenance Manual may be included in the Stormwater Site Plan, or it can be submitted as a stand-alone document. In either case, it shall be written with the intention of becoming an appendix to the Maintenance Covenant, to be recorded with the Snohomish County Auditor's Office. The Operation and Maintenance Manual must include:

- ☐ A brief narrative description of the on-site storm system.
- ☐ A site map, with the locations of the stormwater system, including treatment, detention, infiltration, and any other permanent BMPs prominently noted. This is needed to enable the Operation and Maintenance manual to be a stand-alone document.
- ☐ The person or organization responsible for ongoing maintenance of the on-site storm system, including the phone number and current responsible party.
- ☐ Where the Operation and Maintenance manual is to be kept on site. Note that it must be made available to the City for inspection.
- ☐ A description of each flow control and treatment facility, including what it does and how it works. Include any manufacturer's documentation.
- ☐ A description of all maintenance tasks and the frequency of each task for each flow control and treatment facility. Include the maintenance criteria in the Ecology Manual and any manufacturer's recommendations.
- ☐ A sample maintenance activity log indicating emergency and routine actions to be taken.

### **Required Stormwater Site Plan Appendices**

Appendix A — WWHM Report (or approved equivalent)

Appendix B - Hydraulic Analysis

Appendix C – Operations and Maintenance Manual

### **Required Stand Alone Documents in Support of the SSP**

1. Construction Stormwater Pollution Prevention Plan (SWPPP)
2. Geotechnical reports for stormwater site planning
3. Easement and Covenant Documents

4. Critical areas analysis and delineation (in some instances)
5. Any Other Supporting Documents (as may be necessary for specific site conditions)

### **Required Drawings**

Project drawings shall be provided as required in Appendix C – Construction Plans of the Standards

# Appendix E – Transportation Impact Study Guidelines

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## **E.1 Transportation Impact Analysis Guidelines**

Any development proposal that will generate 10 or more new vehicle trips during the PM peak hour is required to submit a Transportation Impact Analysis as part of their application submittals. A Transportation Impact Analysis may also be required for other projects. The amount of detail to be included in the TIA depends on the complexity of the proposed project and may include non-motorized modes.

Provide two copies, printed double-sided hard copies and one electronic copy in Adobe PDF format.

## **E.2 Transportation Impact Analysis Outline**

The following outline shall be used to prepare the Transportation Impact Analysis. The estimate of vehicle trips shall be conducted in accordance with the most recent version of the Trip Generation Manual, published by the Institute of Traffic Engineers.

### **Cover Page**

- Applicant
- Project Title
- Project Address
- Preparer's contact information, signature, and Professional Engineer stamp

### **Introduction**

#### **1.1 Complete Project Description**

- Current and proposed zoning, comprehensive plan designation;
- Proposed land use(s);
- Size of development – Size of project site and size of the proposed development, such as number and type of housing units, gross floor area and type of non-residential uses;
- If the project will be phased a phasing plan which includes major project milestones

#### **1.2 Project Location and Study Area Boundary**

#### **1.3 Concise Summary of Findings**



## **1.4 Concise Summary of Mitigation, if applicable**

### **Impact Analysis**

#### **2.1 Existing Conditions**

- Description of critical intersections and roadways;
- Identification of peak usage period(s) (use PM peak, as well as any other appropriate peak traffic period, such as AM peak, school times, church usage, etc.);
- Identify City capital projects and planned transportation improvements located in the study area (see most recently adopted Comprehensive Plan and By The Way Plan);
- Identify transportation improvements in the study area planned by other private developers (contact the City at 425.263.8000 to provide the data);
- Identify existing roadway volumes and entering and existing volumes from the site during the PM peak period and peak usage period(s). Existing trips must be measured assuming full occupancy of the existing use on site. If the site and/or existing buildings have been vacant for more than one year, the trips associated with the site and/or use will not be utilized to determine net new trips resulting from the proposed development;
- Existing Level of Service (LOS) at intersections and applicable roadway segments in the study area; identify existing deficiencies/needs. Compare the LOS with planned or identified improvements;
- Accident history within the study area (minimum 3-year analysis period – contact the City at 425.263.8000 or WSDOT for the data);
- Description of other modes of travel and facilities serving the project location – sidewalks, trails, transit routes and stops within a quarter of a mile of the project site;
- If applicable, a gap analysis, transportation network model analysis and special site considerations.

#### **2.2 Traffic Projections – Trip Generation and Distribution**

Include analysis that is direction related to the proposed project, addresses the growth of background traffic, and Transportation Impact Analyses of other developments in the study area that have been applied for but have not been completed. The analysis must include an evaluation of traffic impacts during the PM peak as well as the peak usage period(s) for the proposed project.

- Horizon Year – Analyze impacts for the anticipated project completion year;

- Trip Generation – Refer to the most recent edition of the Trip Generation Manual published by the Institute of Traffic Engineers. Includes anticipated vehicle, pedestrian and vehicle volumes.
- Trip Distribution – Can be determined by:
  - Existing characteristics, if proposal is consistent with neighboring surroundings;
  - Origin/destination studies;
  - Trip distribution models;
  - Market studies.

### **Site Evaluation**

- Sight distance and access point analysis;
- Access design and vehicle queuing;
- Pedestrian and bicycle access from the public right-of-way, adjacent developments, to all principal entrances and to transit routes and stops;
- Internal vehicle, bicycle and pedestrian circulation, and parking design;
- Identify potential mitigations (this can include physical solutions as well as transportation demand management strategies).

### **Recommendations/Conclusions**

- Summary of future traffic volumes and anticipated LOS;
- Summary of on-site access, circulation, design;
- Description of findings and/or deficiencies;
- Description of proposed improvements and recommended mitigations;
- Description of proposed transportation demand management strategies.

Appendix F – Street Matrix

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Alley	1 <sup>st</sup> Lane	Cornelia Avenue	West end (954 1 <sup>st</sup> Lane)	16									10		10							20		Right of Way will be required to be dedicated. Connect to City street via a commercial driveway apron.
Local Access	1 <sup>st</sup> Avenue	SR 525	East end (Edgewater Park)																					Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	10 <sup>th</sup> Street	Park Avenue	Cul-de-sac	50-80	19-48	SE-NW																		No improvements are required, street is built out.
Local Access	10 <sup>th</sup> Street	Campbell Avenue	Park Avenue	60	20	S-N																		Check with the City for requirements.
Local Access	10 <sup>th</sup> Street	Campbell Avenue	Private Road	60	24	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	100 <sup>th</sup> Place SW	48 <sup>th</sup> Avenue W	Cul-de-sac	50–100	26-75	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	101 <sup>st</sup> Place SW	48 <sup>th</sup> Avenue W	Cul-de-sac	50–100	26-75	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	101 <sup>st</sup> Street SW	53 <sup>rd</sup> Avenue W (to the northeast of intersection)	Cul-de-sac	50–92	26-67	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	101 <sup>st</sup> Street SW	53 <sup>rd</sup> Avenue W (to the northwest of intersection)	Cul-de-sac	50–100	32-70	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	102 <sup>nd</sup> Place SW	48 <sup>th</sup> Avenue W	Cul-de-sac	50-90	28-72	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	102 <sup>nd</sup> Street SW	Central Drive	Dead End (6001 102 <sup>nd</sup> St SW)	60	20	W-E/ S-N																		Check with the City for requirements.
Local Access	102 <sup>nd</sup> Street SW	53 <sup>rd</sup> Avenue W	Cul-de-sac	50-90	26-66	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	103 <sup>rd</sup> Place SW	48 <sup>th</sup> Avenue W	Cul-del-sac	50-90	24-62	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	103 <sup>rd</sup> Place SW	Central Drive	Cul-de-sac	50-90	27-67	SE-NW																		No improvements are required, street is built out.
Local Access	103 <sup>rd</sup> Street SW	53 <sup>rd</sup> Avenue W	Cul-de-sac	50-90	26-65	SW-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	104 <sup>th</sup> Place SW	53 <sup>rd</sup> Avenue W	56 <sup>th</sup> Avenue W	60	36	W-E S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	104 <sup>th</sup> Place SW	104 <sup>th</sup> Place SW	Cul-de-sac	56-96	30 - 74	W-E																		No improvements are required, street is built out.
Local Access	104 <sup>th</sup> Place SW	56 <sup>th</sup> Avenue W (to the west of intersection)	Cul-de-sac	50-93	28 - 68	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	104 <sup>th</sup> Place SW	56 <sup>th</sup> Avenue W (to the east of intersection)	Cul-de-sac	50-90	26-64	S-N																		No improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	104 <sup>th</sup> Street SW	51 <sup>st</sup> Place W	Cul-de-sac	50–90	25-67	SE-NW																		No improvements are required, street is built out.
Local Access	104 <sup>th</sup> Street SW	51 <sup>st</sup> Place W	53 <sup>rd</sup> Avenue W	60	34	S-N W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	105 <sup>th</sup> Place SW	56 <sup>th</sup> Avenue W	Cul-de-sac	50 – 90	26	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	106 <sup>th</sup> Street SW	59 <sup>th</sup> Avenue W	Cul-de-sac	50–90	27-62	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	106 <sup>th</sup> Street SW	47 <sup>th</sup> Place W	SR 525	60	35	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	107 <sup>th</sup> Place SW	Chennault Beach Road	Chennault Beach Drive	60	26	S-N W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	107 <sup>th</sup> Street SW	56 <sup>th</sup> Avenue W	Cul-del-sac	50–90	26-65	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	107 <sup>th</sup> Street SW	Harbour Pointe Boulevard	53 <sup>rd</sup> Avenue W	60	35	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Urban Collector	107 <sup>th</sup> Street SW	47 <sup>th</sup> Place W	47 <sup>th</sup> Avenue W	60	33	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	108 <sup>th</sup> Place SW	56 <sup>th</sup> Place W	Cul-de-sac	50–90	27	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	108 <sup>th</sup> Place SW	Harbour Pointe Boulevard	53 <sup>rd</sup> Avenue W	50	25	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	108 <sup>th</sup> Street SW	53 <sup>rd</sup> Avenue W	Cul-de-sac	50–100	26–76	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Urban Collector	109 <sup>th</sup> Street SW	47 <sup>th</sup> Avenue W	47 <sup>th</sup> Place W	60	36	SW-NE																		Right of Way may be required to be dedicated. Check with City on requirements, a project has been identified in the BTW Plan.
Local Access	11 <sup>th</sup> Street	Loveland Avenue	Campbell Avenue	65		S-N																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	110 <sup>th</sup> Place SW	55 <sup>th</sup> Avenue W	58 <sup>th</sup> Avenue W	50	25	W-E S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	111 <sup>th</sup> Place SW	60 <sup>th</sup> Avenue W	58 <sup>th</sup> Avenue W	50	26	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	111 <sup>th</sup> Place SW	55 <sup>th</sup> Avenue W	Cul-de-sac	50–90	26–65	SW-NE																		No improvements are required, street is built out.
Local Access	111 <sup>th</sup> Street SW	58 <sup>th</sup> Avenue W	59 <sup>th</sup> Avenue W	50	26	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	112 <sup>th</sup> Place SW	58 <sup>th</sup> Avenue W	Cul-de-sac	50–90	25–65	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	112 <sup>th</sup> Place SW	113 <sup>th</sup> Place W	58 <sup>th</sup> Avenue W	50	25	SW-NE SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	112 <sup>th</sup> Place SW	55 <sup>th</sup> Avenue W	Cul-de-sac	50–90	25-65	SW-NE																		No improvements are required, street is built out.
Local Access	113 <sup>th</sup> Place SW	58 <sup>th</sup> Avenue W	Cul-de-sac	50–90	25 -70	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	113 <sup>th</sup> Street SW	Harbour Heights Parkway	114 <sup>th</sup> Street SW	60	38	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	114 <sup>th</sup> Street SW	113 <sup>th</sup> Street SW	58 <sup>th</sup> Avenue W	50	26	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	116 <sup>th</sup> Street SW	Harbour Reach Drive	49 <sup>th</sup> Place W	60	34	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. Sidewalks/Landscaping strip required on those parcels that do not have it to match existing street layout.
Local Access	117 <sup>th</sup> Place SW	59 <sup>th</sup> Avenue W	Cul-de-sac	50–100	25-78	S-N																		No improvements are required, street is built out.
Local Access	122 <sup>nd</sup> Place SW	Championship Circle	Cul-de-sac	50–100	28-68	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	125 <sup>th</sup> Place SW	55 <sup>th</sup> Place W	Cul-de-sac	50–90	25-75	S-N E-W																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	125 <sup>th</sup> Place SW	54 <sup>th</sup> Avenue W	Cul-de-sac	30–50	22-25	S-N																		No improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	125 <sup>th</sup> Place SW	52 <sup>nd</sup> Place W	Cul-de-sac	50–113	27-75	S-N SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	126 <sup>th</sup> Street SW	61 <sup>st</sup> Avenue W	Cul-de-sac	50–100	27-80	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	126 <sup>th</sup> Street SW	52 <sup>nd</sup> Place W	Cul-de-sac	50–90	25-72	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	126 <sup>th</sup> Street SW	63 <sup>rd</sup> Place SW	Cul-de-sac	60–95	20-40	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	127 <sup>th</sup> Street SW	55 <sup>th</sup> Place W	52 <sup>nd</sup> Place W	60	35	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	128 <sup>th</sup> Street SW	60 <sup>th</sup> Avenue W	Cul-de-sac	50–100	25-80	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	128 <sup>th</sup> Street SW	56 <sup>th</sup> Place W	Cul-de-sac	50–90	26-78	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	130 <sup>th</sup> Place SW	44 <sup>th</sup> Avenue W	Cul-de-sac	50–100	25-75	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	130 <sup>th</sup> Place SW	42 <sup>nd</sup> Avenue W	44 <sup>th</sup> Avenue W	50	26	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	131 <sup>st</sup> Place SW	45 <sup>th</sup> Street W	Cul-de-sac	50–100	26-75	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.



FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	131 <sup>st</sup> Street SW	48 <sup>th</sup> Avenue W	50 <sup>th</sup> Place W	60	35	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	133 <sup>rd</sup> Street SW	44 <sup>th</sup> Avenue W	45 <sup>th</sup> Avenue W	50	28	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	15 <sup>th</sup> Place	Washington Avenue	Goat Trail Road	60		S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	16 <sup>th</sup> Court	Goat Trail Road	Cul-de-sac	50-80	25-67	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	16 <sup>th</sup> Place	Goat Trail Road	Cul-de-sac	40-95	24-63	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	17 <sup>th</sup> Court	Goat Trail Loop	Cul-de-sac	50-90	26-62	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	17 <sup>th</sup> Place	Washington Avenue	Cul-de-sac	50-100	27-78	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	18 <sup>th</sup> Court	Goat Trail Loop	Cul-de-sac	50-90	25-66	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	18 <sup>th</sup> Street	Goat Trail Loop	Lumley Avenue	50	27	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	19 <sup>th</sup> Drive	SR 525	Cul-de-sac	40-80		S-N W-E																		Check with the City for requirements.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	19 <sup>th</sup> Street	Goat Trail Loop	Dead End (1117 19 <sup>th</sup> Street)	50	30	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Urban Collector	2 <sup>nd</sup> Street	SR 525	Park Avenue	60	43-64	S- N																		Check with the City for requirements, a project has been identified in the BTW Plan.
Urban Collector	2 <sup>nd</sup> Street	Park Avenue	Loveland Avenue	60	36-44	S-N	1	8		1.5	17	0	11	0	11	0	8	1.5		8	1	68	49	Right of Way will be required to be dedicated. 45 degree angle parking on south side. 8 foot sidewalk requires landscaping amenities.
Urban Collector	2 <sup>nd</sup> Street	Loveland Avenue	Prospect Avenue	60		S-N																		No improvements are required, street is built out.
Local Access	2 <sup>nd</sup> Street	Prospect	East end (1146 2 <sup>nd</sup> Street)	60		S-N																		No improvements are required, street is built out.
Local Access	3 <sup>rd</sup> Lane	Lamar Drive	Dead end (1509 3 <sup>rd</sup> Lane)	28		S-N																		Check with the City for requirements.
Local Access	3 <sup>rd</sup> Street	Church Avenue	SR 525	50-60		S-N																		Right of Way will be required to be dedicated from 520 and 528 3 <sup>rd</sup> Street.
Local Access	3 <sup>rd</sup> Street	SR 525	Park Avenue	60	26-45	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	3 <sup>rd</sup> Street	Park Avenue	Loveland Avenue	60	33	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	3 <sup>rd</sup> Street	Loveland Avenue	East end (1128 3 <sup>rd</sup> Street)	60		S-N																		No improvements are required, street is built out.
Local Access	4 <sup>th</sup> Street	West end (401 4 <sup>th</sup> Street)	Washington Avenue	30–60		S-N																		No improvements are required, street is built out.
Local Access	4 <sup>th</sup> Street	SR 525	Lincoln Avenue	60	24 – 35	S-N																		No improvements are required, street is built out.
Local Access	4 <sup>th</sup> Street	400’ west of Loveland Avenue	East end (1126 3 <sup>rd</sup> Street)	60		S-N																		No improvements are required, street is built out.
Local Access	40 <sup>th</sup> Avenue W	SR 526	78 <sup>th</sup> Street SW	30		W-E																		Check with the City for requirements.
Local Access	42 <sup>nd</sup> Avenue W	46 <sup>th</sup> Place W	47 <sup>th</sup> Place W	50	26	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	42 <sup>nd</sup> Avenue W	47 <sup>th</sup> Place W	Harbour Heights Drive	50	26	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	42 <sup>nd</sup> Avenue W	Harbour Heights Drive	130 <sup>th</sup> Place SW	50	26	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	42 <sup>nd</sup> Court	42 <sup>nd</sup> Avenue W	Cul-de-sac	50–100	28-78	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	42 <sup>nd</sup> Place W	130 <sup>th</sup> Place SW	Cul-de-sac	50–100	28-75	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	43 <sup>rd</sup> Avenue W	130 <sup>th</sup> Place SW	Dead End (13002 43 <sup>rd</sup> Avenue W)	50	27	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Urban Collector	44 <sup>th</sup> Avenue W	84 <sup>th</sup> Street SW/SR 526	76 <sup>th</sup> Street SW	45-60	35-42	W-E																		Right of Way will be required to be dedicated. Check with the City for requirements, a project has been identified in the BTW Plan.
Urban Collector	44 <sup>th</sup> Avenue W	92 <sup>nd</sup> Street SW	84 <sup>th</sup> Street SW/ SR 526	60		W-E																		Check with the City for requirements.
Local Access	44 <sup>th</sup> Avenue W	Harbour Heights Drive	130 <sup>th</sup> Place SW	50	26	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	44 <sup>th</sup> Avenue W	42 <sup>nd</sup> Avenue W	Harbour Heights Drive	50	26	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	44 <sup>th</sup> Place W	71 <sup>st</sup> Place SW	73 <sup>rd</sup> Place SW	50–90	33-65	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	45 <sup>th</sup> Avenue W	71 <sup>st</sup> Place SW	Cul-de-sac	50–90	26-60	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	45 <sup>th</sup> Avenue W	80 <sup>th</sup> Street SW	Cul-de-sac	50–90	27-66	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	45 <sup>th</sup> Avenue W	92 <sup>nd</sup> Street SW	Cul-de-sac	50–100	27-65	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	45 <sup>th</sup> Avenue W	Harbour Heights Drive	133 <sup>rd</sup> Street SW	50	26	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	45 <sup>th</sup> Court	47 <sup>th</sup> Place W	Cul-de-sac	50–100	27-75	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	45 <sup>th</sup> Place W	76 <sup>th</sup> Street SW	Cul-de-sac	60–80		W-E																		No improvements are required, street is built out.
Local Access	45 <sup>th</sup> Place W	84 <sup>th</sup> Street SW	Cul-de-sac	60–100		W-E																		No improvements are required, street is built out.
Local Access	45 <sup>th</sup> Place W	88 <sup>th</sup> Street SW	Cul-de-sac	50–100	33-76	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	45 <sup>th</sup> Place W	92 <sup>nd</sup> Street SW	88 <sup>th</sup> Street SW	50–80		W-E																		Check with the City for requirements.
Urban Collector	46 <sup>th</sup> Avenue W	76 <sup>th</sup> Street SW	73 <sup>rd</sup> Street SW	60–68	36	W-E																		Right of Way will be required to be dedicated. Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	46 <sup>th</sup> Avenue W	78 <sup>th</sup> Avenue W	80 <sup>th</sup> Street SW	60		W-E																		Check with the City for requirements.
Local Access	46 <sup>th</sup> Avenue W	80 <sup>th</sup> Street SW	Cul-de-sac	50–90	30-75	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	46 <sup>th</sup> Avenue W	92 <sup>nd</sup> Street SW	Cul-de-sac	50–90		W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	46 <sup>th</sup> Place W	76 <sup>th</sup> Street SW	Cul-de-sac	60–80	25-65	W-E																		Check with the City for requirements.
Local Access	46 <sup>th</sup> Place W	80 <sup>th</sup> Street SW	Cul-de-sac	50–90		W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	46 <sup>th</sup> Place W	84 <sup>th</sup> Street SW	Dead End (8220 46 <sup>th</sup> Place W)	30-70		W-E																		Check with the City for requirements.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	46 <sup>th</sup> Place W	84 <sup>th</sup> Street SW	Cul-de-sac	60–90	22-66	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	46 <sup>th</sup> Place W	88 <sup>th</sup> Street SW	Cul-de-sac (to the North of 88 <sup>th</sup> )	60–95	26-75	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	46 <sup>th</sup> Place W	88 <sup>th</sup> Street SW	Cul-de-sac (to the South of 88 <sup>th</sup> )	50–90	26-65	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	46 <sup>th</sup> Place W	92 <sup>nd</sup> Street SW	Cul-de-sac	50–100	27-76	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	46 <sup>th</sup> Place W	47 <sup>th</sup> Place W	Cul-de-sac (to the North of 47 <sup>th</sup> )	50–100	26-75	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	46 <sup>th</sup> Place W	47 <sup>th</sup> Place W	Cul-de-sac (to the South of 47 <sup>th</sup> )	50–100	26-75	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	47 <sup>th</sup> Avenue W	71 <sup>st</sup> Place SW	Cul-de-sac	50-90	26-70	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	47 <sup>th</sup> Avenue W	73 <sup>rd</sup> Street SW	Cul-de-sac	60–90		W-E																		No improvements are required street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Urban Collector	47 <sup>th</sup> Avenue W	Chennault Beach Road	109 <sup>th</sup> Street SW	60	35	W-E																		Right of Way may be required to be dedicated. Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	47 <sup>th</sup> Place W	88 <sup>th</sup> Street SW	Cul-de-sac	50-90	26-66	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Urban Collector	47 <sup>th</sup> Place W	109 <sup>th</sup> Street SW	Harbour Pointe Boulevard North	60	32-37	W-E																		Right of Way may be required to be dedicated. Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	47 <sup>th</sup> Place W	Harbour Heights Drive	48 <sup>th</sup> Avenue W	60	33	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	47 <sup>th</sup> Place W	Beverly Park Road	131 <sup>st</sup> Street SW	60	35	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Urban Collector	48 <sup>th</sup> Avenue W	73 <sup>rd</sup> Street SW	70 <sup>th</sup> Street SW	50–60	24	W-E																		Right of Way will be required to be dedicated. Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	48 <sup>th</sup> Avenue W	73 <sup>rd</sup> Street SW	Cul-de-sac	50–100	25-65	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	48 <sup>th</sup> Avenue W	Harbour Pointe Boulevard	99 <sup>th</sup> Street SW	50	31	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.



FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	48 <sup>th</sup> Avenue W	76 <sup>th</sup> Street SW	Cul-de-sac	50–80		W-E																		Check with the City for requirements.
Local Access	48 <sup>th</sup> Avenue W	131 <sup>st</sup> Street SW	Cul-de-sac	50–100	27-78	SW-NE																		No improvements are required, street is built out.
Local Access	48 <sup>th</sup> Place W	80 <sup>th</sup> Place W	Cul-de-sac	50–90	18-34	W-E																		No improvements are required, street is built out.
Local Access	48 <sup>th</sup> Place W	87 <sup>th</sup> Street SW	88 <sup>th</sup> Street SW	50		W-E																		Check with the City for requirements.
Local Access	48 <sup>th</sup> Place W	88 <sup>th</sup> Street SW	46 <sup>th</sup> Place W	50	26	E-W SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	49 <sup>th</sup> Avenue W	76 <sup>th</sup> Street SW	Cul-de-sac	50–80		W-E																		Check with the City for requirements.
Local Access	49 <sup>th</sup> Avenue W	92 <sup>nd</sup> Street SW	Dead End (8826 49 <sup>th</sup> Avenue W)	75	23	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	49 <sup>th</sup> Avenue W	49 <sup>th</sup> Avenue W	Dead End (8928 49 <sup>th</sup> Avenue W)	TBD		S-N																		No improvements are required, street is built out. This street may be private, verify with the City.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	49 <sup>th</sup> Avenue W	92 <sup>nd</sup> Street SW	94 <sup>th</sup> Street SW	80		W-E																		Check with the City for requirements.
Local Access	49 <sup>th</sup> Avenue W	70 <sup>th</sup> Street SW	Cul-de-sac	60–100	28-69	W-E																		No improvements are required, street is built out.
Local Access	49 <sup>th</sup> Avenue W	50 <sup>th</sup> Place W	Cul-de-sac (to the North of 50 <sup>th</sup> Pl W)	50–100	28-77	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	49 <sup>th</sup> Avenue W	50 <sup>th</sup> Place W	Cul-de-sac (to the South of 50 <sup>th</sup> Pl W)	50–100	27 - 80	W-E																		No improvements are required, street is built out.
Local Access	49 <sup>th</sup> Place W	78 <sup>th</sup> Place SW	Cul-de-sac	50–80		W-E																		No improvements are required, street is built out.
Local Access	49 <sup>th</sup> Place W	78 <sup>th</sup> Place SW	80 <sup>th</sup> Street SW	60		W-E																		Check with the City for requirements.
Local Access	49 <sup>th</sup> Place W	97 <sup>th</sup> Place SW	98 <sup>th</sup> Street SW	50	27	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	49 <sup>th</sup> Place W	Harbour Reach Drive	116 <sup>th</sup> Street SW	60	29	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	5 <sup>th</sup> Place	Cornelia Avenue	East end (1127 5 <sup>th</sup> Place)	Part of 5 <sup>th</sup> Street ROW – 100–160		S-N																		No improvements are required, street is built out.
Local Access	5 <sup>th</sup> Street	Webster Avenue	SR 525	60		S-N																		No improvements are required, street is built out.
Principal Arterial	5 <sup>th</sup> Street	SR 525	City Limits/ Edgewater Creek Bridge	80–171	28 - 66	S-N																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	50 <sup>th</sup> Avenue W	99 <sup>th</sup> Street SW	Cul-de-sac	50–100	25-73	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	50 <sup>th</sup> Place W	50 <sup>th</sup> Place W	Cul-de-sac	50–100	27-75	S-N																		No improvements are required, street is built out.
Local Access	50 <sup>th</sup> Place W	92 <sup>nd</sup> Street SW	Cul-de-sac	50–90	25-65	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	50 <sup>th</sup> Place W	Harbour Pointe Boulevard	97 <sup>th</sup> Street SW	50	26-32	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	50 <sup>th</sup> Place W	131 <sup>st</sup> Street SW	Harbour Heights Drive	60	37	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	51 <sup>st</sup> Place W	Harbour Pointe Boulevard	104 <sup>th</sup> Street SW	60	34	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	52 <sup>nd</sup> Avenue W	92 <sup>nd</sup> Street SW	93 <sup>rd</sup> Place SW	60		W-E																		Check with the City for requirements.
Local Access	52 <sup>nd</sup> Avenue W	80 <sup>th</sup> Street SW	Cul-de-sac	60–90		W-E																		No improvements are required, street is built out.
Local Access	52 <sup>nd</sup> Place W	108 <sup>th</sup> Place SW	Cul-de-sac	50–100	24-80	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	52 <sup>nd</sup> Place W	Harbour Pointe Boulevard	127 <sup>th</sup> Street SW	60	35	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	52 <sup>nd</sup> Place W	127 <sup>th</sup> Street SW	Cul-de-sac	50	28	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	53 <sup>rd</sup> Avenue W	81 <sup>st</sup> Place SW	Dead End	50		W-E																		Right of Way will be required to be dedicated. Check with City on requirements, a project has been identified in the BTW Plan.
Local Access	53 <sup>rd</sup> Avenue W	84 <sup>th</sup> Street SW	81 <sup>st</sup> Place SW	45-60		W-E																		Right of Way will be required to be dedicated. Check with City on requirements, a project has been identified in the BTW Plan.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	53 <sup>rd</sup> Avenue W	88 <sup>th</sup> Street SW	86 <sup>th</sup> Place SW	50	26	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	53 <sup>rd</sup> Avenue W	88 <sup>th</sup> Street SW	92 <sup>nd</sup> Street SW	40–50		W-E																		Right of Way will be required to be dedicated. Check with City on requirements, a project has been identified in the BTW Plan.
Local Access	53 <sup>rd</sup> Avenue W	94 <sup>th</sup> Place SW	Cul-de-sac	50–100	27-66	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	53 <sup>rd</sup> Avenue W	101 <sup>st</sup> Street SW	104 <sup>th</sup> Street SW	50	34	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	53 <sup>rd</sup> Avenue W	108 <sup>th</sup> Place SW	Cul-de-sac	50	27	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	53 <sup>rd</sup> Place W	87 <sup>th</sup> Place SW	Cul-de-sac	50–90	20-26	S-N W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	53 <sup>rd</sup> Place W	Harbour Pointe Boulevard	Cul-de-sac	50–100	27-76	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	54 <sup>th</sup> Avenue W	127 <sup>th</sup> Street SW	Cul-de-sac (to the North of 127 <sup>th</sup> )	50–90	26-77	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	54 <sup>th</sup> Avenue W	127 <sup>th</sup> Street SW	Cul-de-sac (to the South of 127 <sup>th</sup> )	50-90	26-77	W-E S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	54 <sup>th</sup> Avenue W	84 <sup>th</sup> Street SW	85 <sup>th</sup> Place SW	60		W-E																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	54 <sup>th</sup> Place W	85 <sup>th</sup> Place SW	88 <sup>th</sup> Street SW	60–80		W-E																		Check with City on requirements, a project has been identified in the BTW Plan.
Local Access	55 <sup>th</sup> Avenue W	94 <sup>th</sup> Place SW	Cul-de-sac	75-100	50-66	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	55 <sup>th</sup> Avenue W	110 <sup>th</sup> Place SW	Harbour Heights Parkway	50	25	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	55 <sup>th</sup> Avenue W	127 <sup>th</sup> Street SW	128 <sup>th</sup> Street SW	50	26	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	55 <sup>th</sup> Place W	88 <sup>th</sup> Street SW	Cul-de-sac	60–90		W-E																		No improvements are required, street is built out.
Local Access	55 <sup>th</sup> Place W	Harbour Pointe Boulevard	127 <sup>th</sup> Place W	60	35	W-E S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	56 <sup>th</sup> Avenue W	Chennault Beach Road	104 <sup>th</sup> Place SW	60–90	34	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	56 <sup>th</sup> Avenue W	92 <sup>nd</sup> Street SW	93 <sup>rd</sup> Place SW	60		W-E																		Check with the City for requirements.
Local Access	56 <sup>th</sup> Avenue W	94 <sup>th</sup> Place SW	Cul-de-sac	50–100	24-65	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	56 <sup>th</sup> Place W	107 <sup>th</sup> Place SW	Cul-de-sac	50–90	26-65	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	56 <sup>th</sup> Place W	88 <sup>th</sup> Street SW	86 <sup>th</sup> Place SW	60		W-E																		Check with the City for requirements.
Local Access	56 <sup>th</sup> Place W	88 <sup>th</sup> Street SW	Cul-de-sac	60–90		W-E																		Check with the City for requirements.
Local Access	56 <sup>th</sup> Place W	110 <sup>th</sup> Place SW	Cul-de-sac	50–90	24-67	SW-NE																		No improvements are required, street is built out.
Local Access	56 <sup>th</sup> Place W	128 <sup>th</sup> Street SW	Cul-de-sac	50–90	26-77	SE-NW																		No improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	57 <sup>th</sup> Avenue W	92 <sup>nd</sup> Street SW	96 <sup>th</sup> Street SW	60	40	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	57 <sup>th</sup> Place W	107 <sup>th</sup> Place SW	Cul-de-sac	50–90	26-66	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	58 <sup>th</sup> Avenue W	107 <sup>th</sup> Place SW	Cul-de-sac	50–90	27-70	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	58 <sup>th</sup> Avenue W	Harbour Heights Parkway	111st Street SW	60	35	W-E NW-SE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	58 <sup>th</sup> Avenue W	114 <sup>th</sup> Street SW	Harbour Heights Parkway	50–60	26-38	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	58 <sup>th</sup> Place W	96 <sup>th</sup> Street SW	Cul-de-sac	50–90	26-65	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	58 <sup>th</sup> Place W	58 <sup>th</sup> Place W	Cul-de-sac	50–90	26-65	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	59 <sup>th</sup> Avenue W	94 <sup>th</sup> Street SW	Cul-de-sac	60–90		SW-NE																		Check with the City for requirements.



FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	59 <sup>th</sup> Avenue W	Chennault Beach Drive	Canyon Drive	60	28	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	59 <sup>th</sup> Avenue W	111st Street SW	Cul-de-sac	50–90	29-64	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	59 <sup>th</sup> Avenue W	Saint Andrews Drive	Clubhouse Lane	50	26	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	6 <sup>th</sup> Street	Webster Street	SR 525	60		S-N																		No improvements are required, street is built out.
Local Access	6 <sup>th</sup> Street	Lincoln Avenue	Washington Avenue	60	20	S-N																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	6 <sup>th</sup> Street	Park Avenue	Prospect Avenue	60		S-N																		No improvements are required, street is built out.
Local Access	60 <sup>th</sup> Avenue W	96 <sup>th</sup> Street SW	Dead End (North of 92 <sup>nd</sup> Place W)	55		W-E																		Check with the City for requirements.
Local Access	60 <sup>th</sup> Avenue W	Chennault Beach Drive	Cul-de-sac	60–75		W-E																		Check with the City for requirements.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	60 <sup>th</sup> Avenue W	59 <sup>th</sup> Avenue W	111st Place SW	50	26	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	60 <sup>th</sup> Avenue W	Double Eagle Drive	Cul-de-sac	50–100	30-81	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	60 <sup>th</sup> Place W	Saint Andrews Drive	Cul-de-sac			W-E																		No improvements are required, street is built out. This street may be private, check with the City.
Local Access	61 <sup>st</sup> Avenue W	92 <sup>nd</sup> Street SW	Cul-de-sac	55–90		W-E																		Check with the City for requirements.
Local Access	61 <sup>st</sup> Avenue W	Clubhouse Lane	128 <sup>th</sup> Street SW	50	26	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	61 <sup>st</sup> Place W	91 <sup>st</sup> Place SW	88 <sup>th</sup> Street SW (Private Road)	50–140		W-E S-N																		Check with the City for requirements.
Local Access	62 <sup>nd</sup> Place W	92 <sup>nd</sup> Street SW	95 <sup>th</sup> Place SW	60		W-E																		Check with the City for requirements.
Local Access	62 <sup>nd</sup> Place W	Central Drive	102 <sup>nd</sup> Street SW	60		W-E																		Check with the City for requirements.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	62 <sup>nd</sup> Place W	Central Drive	Chennault Beach Drive	60		W-E																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	63 <sup>rd</sup> Place W	Clubhouse Lane	Cul-de-sac	50–100	20-26	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	63 <sup>rd</sup> Place W	92 <sup>nd</sup> Street SW	Dead End (9404 63 <sup>rd</sup> Place W)	50		W-E																		Check with the City for requirements.
Local Access	64 <sup>th</sup> Place W	Chennault Beach Drive	Central Drive	60		W-E																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	66 <sup>th</sup> Place W	Marine View Drive	64 <sup>th</sup> Place W	60		W-E S-N																		Check with the City for requirements.
Local Access	7 <sup>th</sup> Street	Park Avenue	East end (813 7 <sup>th</sup> Street)	60	18	S-N																		No improvements are required, street is built out.
Local Access	70 <sup>th</sup> Place SW	70 <sup>th</sup> Street SW	Cul-de-sac	50–95	30	S-N W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Urban Collector	70 <sup>th</sup> Street SW	48 <sup>th</sup> Avenue W	Goat Trail Road	65	30	S-N																		Right of Way will be required to be dedicated. Check with City on requirements, a project has been identified in the BTW Plan.
Local Access	71 <sup>st</sup> Place SW	48 <sup>th</sup> Avenue W	44 <sup>th</sup> Place W	50–93	34-60	S-N SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	72 <sup>nd</sup> Place SW	48 <sup>th</sup> Avenue W	Cul-de-sac	50–90	26-66	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. Other improvements may be required to connect to 48 <sup>th</sup> Avenue W, check with the City for
Local Access	73 <sup>rd</sup> Place SW	48 <sup>th</sup> Avenue W	Cul-de-sac	50–100	26-66	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	73 <sup>rd</sup> Place SW	46 <sup>th</sup> Avenue W	44 <sup>th</sup> Place W	50-100	32	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Urban Collector	73 <sup>rd</sup> Street SW	46 <sup>th</sup> Avenue W	48 <sup>th</sup> Avenue W	60		S-N																		Right of Way will be required to be dedicated. Check with City on requirements, a project has been identified in the BTW Plan.
Local Access	74 <sup>th</sup> Street SW	46 <sup>th</sup> Avenue W	Cul-de-sac	50–100	25-67	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. Other improvements may be required to connect to 46 <sup>th</sup> Avenue W, check with the City for
Local Access	75 <sup>th</sup> Street SW	46 <sup>th</sup> Avenue W	Cul-de-sac (to the East of 46 <sup>th</sup> Ave W)	60–90		S-N SE-NW																		Check with the City for requirements.
Local Access	75 <sup>th</sup> Street SW	46 <sup>th</sup> Avenue W	Cul-de-sac (to the West of 46 <sup>th</sup> Ave W)	50-90	26-66	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Urban Collector	76 <sup>th</sup> Street	SR 525	44 <sup>th</sup> Avenue W	43-75	23-43	S-N																		Right of Way will be required to be dedicated. Check with City on requirements, a project has been identified in the BTW Plan.
Local Access	78 <sup>th</sup> Place SW	49 <sup>th</sup> Place W	Cul-de-sac	60–90		SE-NW S-N																		Check with the City for requirements.
Local Access	78 <sup>th</sup> Street SW	44 <sup>th</sup> Avenue W	40 <sup>th</sup> Avenue W	40–60		S-N																		Right of Way will be required to be dedicated. Check with the City for requirements.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	79 <sup>th</sup> Place SW	46 <sup>th</sup> Avenue W	Cul-de-sac	60–90		S-N																		Check with the City for requirements.
Urban Collector	8 <sup>th</sup> Drive	Goat Trail Road	11 <sup>th</sup> Street	60–90		W-E																		Right of Way may be required to be dedicated. Check with City on requirements, a project has been identified in the BTW Plan.
Local Access	8 <sup>th</sup> Street	Webster Street	SR 525	60		S-N																		No improvements are required, street is built out.
Local Access	8 <sup>th</sup> Street	West end (906 8 <sup>th</sup> Street)	East end (1010 8 <sup>th</sup> Street)	60		S-N																		No improvements are required, street is built out.
Local Access	80 <sup>th</sup> Street SW	53 <sup>rd</sup> Avenue W	Dead End (5105 80 <sup>th</sup> St SW)	60		S-N																		No improvements are required, street is built out.
Local Access	80 <sup>th</sup> Street SW	SR 525	44 <sup>th</sup> Avenue W	60		S-N																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	81 <sup>st</sup> Place SW	53 <sup>rd</sup> Avenue W	SR 525	60	35	S-N																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	81 <sup>st</sup> Place SW	SR 525	Cul-de-sac	60–90	26-65	S-N W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	84 <sup>th</sup> Street SW	Naketa Lane	53 <sup>rd</sup> Avenue W	70–100		S-N																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	84 <sup>th</sup> Street SW	53 <sup>rd</sup> Avenue W	SR 525	60-85	45	S-N																		Check with the City for requirements, a project has been identified in the BTW Plan.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Principal Arterial	84 <sup>th</sup> Street SW	SR 525	Paine Field Boulevard	70	52	S-N																		Check with the City for requirements.
Local Access	85 <sup>th</sup> Place SW	54 <sup>th</sup> Place W	Cul-de-sac	60–100		S-N																		Check with the City for requirements.
Local Access	85 <sup>th</sup> Place SW	44 <sup>th</sup> Avenue W	Cul-de-sac	50–90	24-63	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	86 <sup>th</sup> Place SW	56 <sup>th</sup> Place W	60 <sup>th</sup> Avenue W (Private Road)	50		S-N																		Check with the City for requirements.
Local Access	86 <sup>th</sup> Place SW	53 <sup>rd</sup> Avenue W	Cul-de-sac	50–90	25-66	S-N																		No improvements are required, street is built out.
Local Access	87 <sup>th</sup> Place SW	53 <sup>rd</sup> Place W	53 <sup>rd</sup> Avenue W	50	28	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	87 <sup>th</sup> Place SW	53 <sup>rd</sup> Avenue W	Cul-de-sac	50-90	25-70	S-N																		Check with the City for requirements.
Local Access	87 <sup>th</sup> Street SW	48 <sup>th</sup> Place W	Cul-de-sac	50–80		S-N																		Check with the City for requirements.
Urban Collector	88 <sup>th</sup> Street SW	SR 525	48 <sup>th</sup> Place W	60	32	S-N																		Right of Way may be required to be dedicated. Check with City on requirements, a project has been identified in the BTW Plan.
Urban Collector	88 <sup>th</sup> Street SW	48 <sup>th</sup> Place W	44 <sup>th</sup> Avenue W	60	30	S-N																		Right of Way will be required to be dedicated. Check with City on requirements, a project has been identified in the BTW Plan.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Urban Collector	88 <sup>th</sup> Street SW	56 <sup>th</sup> Place W	SR 525	60		S-N																		Right of Way will be required to be dedicated. Check with City on requirements, a project has been identified in the BTW Plan.
Local Access	88 <sup>th</sup> Street SW	Dead End/Private Road Begin	56 <sup>th</sup> Place W	60		S-N																		No improvements are required, street is built out.
Local Access	89 <sup>th</sup> Place SW	48 <sup>th</sup> Place W	Cul-de-sac	50-90	25-66	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	89 <sup>th</sup> Place SW	44 <sup>th</sup> Avenue W	Cul-de-sac	50-90		S-N																		Check with the City for requirements. Addressed still as 44 <sup>th</sup> Ave. W.
Local Access	9 <sup>th</sup> Street	Webster Street	Dead End (406 9 <sup>th</sup> St)	30-60		S-N																		No improvements are required, street is built out.
Urban Major Collector	9 <sup>th</sup> Street	Loveland Avenue	Dead End (1012 9 <sup>th</sup> Street)	60		S-N																		Check with the City for requirements.
Local Access	9 <sup>th</sup> Street	Park Avenue	Loveland Avenue	60		S-N																		No improvements are required, street is built out.
Local Access	90 <sup>th</sup> Place SW	50 <sup>th</sup> Place W	49 <sup>th</sup> Avenue W	50	28	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	91 <sup>st</sup> Place SW	61 <sup>st</sup> Place W	92 <sup>nd</sup> Street SW	60	18	S-N																		No improvements are required, street is built out.
Local Access	92 <sup>nd</sup> Place SW	Cul-de-sac	57 <sup>th</sup> Ave W	50	24	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	92 <sup>nd</sup> Place SW	61 <sup>st</sup> Avenue W	60 <sup>th</sup> Avenue W	50	27	S-N																		No improvements are required, street is built out.
Local Access	92 <sup>nd</sup> Street SW	63 <sup>rd</sup> Place W	61 <sup>st</sup> Avenue W	50		S-N																		Check with the City for requirements.
Local Access	92 <sup>nd</sup> Street SW	61 <sup>st</sup> Avenue W	91 <sup>st</sup> Place SW	50-90		S-N																		Check with the City for requirements.
Local Access	92 <sup>nd</sup> Street SW	91 <sup>st</sup> Place SW	SR 525	60-140	30	S-N																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	92 <sup>nd</sup> Street SW	SR 525	44 <sup>th</sup> Avenue W	60	29	S-N																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	93 <sup>rd</sup> Place SW	62 <sup>nd</sup> Place W	61 <sup>st</sup> Ave W	40-45		S-N W-E																		Check with the City for requirements.
Local Access	93 <sup>rd</sup> Place SW	57 <sup>th</sup> Avenue W	Cul-de-sac	50-100	27-65	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	93 <sup>rd</sup> Place SW	56 <sup>th</sup> Avenue W	52 <sup>nd</sup> Avenue W	60-80		S-N																		Check with the City for requirements.
Local Access	93 <sup>rd</sup> Place SW	45 <sup>th</sup> Avenue W	Cul-de-sac	50-90	25-66	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	94 <sup>th</sup> Place SW	57 <sup>th</sup> Avenue W	Cul-de-sac	50-100	25-66	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.



FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	94 <sup>th</sup> Place SW	57 <sup>th</sup> Avenue W	53 <sup>rd</sup> Avenue W	50	26	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	94 <sup>th</sup> Street SW	60 <sup>th</sup> Avenue W	Dead End (5813 94 <sup>th</sup> St SW)	60		S-N SE-NW																		Check with the City for requirements.
Local Access	95 <sup>th</sup> Place SW	62 <sup>nd</sup> Place W	Cul-de-sac	50-90	25-66	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	95 <sup>th</sup> Place SW	57 <sup>th</sup> Avenue W	Cul-de-sac (to the West of 57 <sup>th</sup> Ave W)	50-100	26-66	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	95 <sup>th</sup> Place SW	57 <sup>th</sup> Avenue A	Cul-de-sac (to the East of 57 <sup>th</sup> Ave W)	50-100	24-66	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	95 <sup>th</sup> Street SW	60 <sup>th</sup> Avenue W	Cul-de-sac	50-90	24-47	S-N																		Check with the City for requirements.
Local Access	96 <sup>th</sup> Street SW	60 <sup>th</sup> Avenue W	Cul-de-sac (to the West of 60 <sup>th</sup> Ave W)	50-90	20-26	SE-NW W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	96 <sup>th</sup> Street SW	60 <sup>th</sup> Avenue W	Dead End (5640 96 <sup>th</sup> St SW)	TBD		S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. This may be a private street, check with the City.
Local Access	97 <sup>th</sup> Place SW	49 <sup>th</sup> Place W	Cul-de-sac	50-100	26-76	SE-NW																		No improvements are required, street is built out.
Local Access	97 <sup>th</sup> Street SW	50 <sup>th</sup> Place W	49 <sup>th</sup> Place W	50	27	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	98 <sup>th</sup> Street SW	50 <sup>th</sup> Place W	49 <sup>th</sup> Place W	50	27	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	99 <sup>th</sup> Place SW	48 <sup>th</sup> Avenue W	Cul-de-sac	50-100	26-47	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	99 <sup>th</sup> Street SW	50 <sup>th</sup> Place W	48 <sup>th</sup> Avenue W	50-100	35-60	S-N SE-NW SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Arbors Circle	Campus Place	Northport Way	45	27	SE-NW SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out
Local Access	Arbors Place	Northport Way	Arbors Circle	20	20	SE-NW SW-NE																		No improvements are required, street is built out.
Local Access	Arbors Place	Northport Way	Dead End (11985 Arbors Pl)	20	20	SE-NW																		No improvements are required, street is built out.
Urban Minor Arterial	Beverly Park Road	SR 525	47 <sup>th</sup> Place W	60-100	39-85	SE-NW																		Check with the City for requirements.
Local Access	Blue Heron Boulevard	Harbour Reach Drive	Harbour Pointe Boulevard SW	60	26-49	W-E/ S-N																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	Bridgeport Place	Hartford Way	Cul-de-sac	40-80	20-65	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Brighton Place	Dead End (5024 Brighton)	Cul-de-sac	40-95	20-66	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	Camden Place	Dead End (4628 Camden Place)	Dead End (4693 Camden Place)	35-84	20-80	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Campbell Avenue	6 <sup>th</sup> Street	Whittington Street	40-80		W-E																		Check with the City for requirements.
Local Access	Campbell Avenue	8 <sup>th</sup> Street	9 <sup>th</sup> Street	60		W-E																		Check with the City for requirements.
Local Access	Campbell Avenue	10 <sup>th</sup> Street	11 <sup>th</sup> Street			W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Campus Place	Harbour Reach Drive	Cul-de-sac	60	24	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Campus Place	Arbors Circle	Harbour Reach Drive	45	26	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Canyon Drive	62 <sup>nd</sup> Place W	59 <sup>th</sup> Avenue W	60		S-N																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	Central Drive	Chennault Beach Road	103 <sup>rd</sup> Place SW	60		SW-NE																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	Central Drive	103 <sup>rd</sup> Place SW	64 <sup>th</sup> Place W	60		S-E																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	Championship Circle	Clubhouse Lane (NE end)	Clubhouse Lane (SW End)	50	25	W-E S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Urban Collector	Chennault Beach Drive	Marine View Drive	60 <sup>th</sup> Avenue W	60		S-N																		Right of Way may be required to be dedicated. Check with City on requirements, a project has been identified in the BTW Plan.
Urban Collector	Chennault Beach Drive	60 <sup>th</sup> Avenue W	Chennault Beach Road	60	26-40	S-N																		Check with the City for requirements, a project has been identified in the BTW Plan.
Urban Collector	Chennault Beach Road	Chennault Beach Road/Harbour Reach Drive	SR 525	60	37-53	S-N																		Right of Way may be required to be dedicated. Check with City on requirements, two projects has been identified in the BTW Plan.
Urban Collector	Chennault Beach Road	Chennault Beach Road/Harbour Reach Drive	Harbour Pointe Boulevard North	60	33-35	W-E																		Right of Way may be required to be dedicated. Check with City on requirements, a project has been identified in the BTW Plan.
Urban Collector	Chennault Beach Road	Harbour Pointe Boulevard North	Central Drive	60	27-46	SW-NE																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	Church Avenue	3 <sup>rd</sup> Street	8 <sup>th</sup> Street	20-60		W-E																		Check with the City for requirements.
Local Access	Clover Court	Clover Lane	Cul-de-sac	50-90	26-66	W-E S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Clover Lane	SR 525	Washington Avenue	50	25	S-N																		Check with the City for requirements.
Local Access	Clover Place	Clover Lane	Cul-de-sac	50-90	24-60	W-E SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Club House Lane	Harbour Pointe Boulevard	Cul-de-sac	50-100	20-25	W-E SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	Concord Way	Wilmington Way	Dead End (11945 Concord Way)	40	25	W-E S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Cornelia Avenue	First Lane	2 <sup>nd</sup> Street	30		W-E																		No improvements are required, street is built out.
Local Access	Cornelia Avenue	2 <sup>nd</sup> Street	6 <sup>th</sup> Street	30-60		W-E																		No improvements are required, street is built out.
Local Access	Crownmill Avenue	Goat Trail Loop Road	Cul-de-sac	50-90	25-66	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Cyrus Way	Harbour Pointe Boulevard SW	Evergreen Drive	60	34	W-E																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	Cyrus Way	Harbour Pointe Boulevard SW	Russell Road/ SR 525	60	35	W-E																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	Cyrus Way	Russell Road	Chennault Beach Road	TBD		W-E																		Check with the City for requirements, a project has been identified in the Six Year TIP and the BTW Plan.
Local Access	Debreton Lane	Dead End (1502 Debreton Ln)	Dead End (1610 Debreton Lane)	40-81		SE-NW																		Check with the City for requirements.
Local Access	Double Eagle Drive	Harbour Pointe Boulevard	61 <sup>st</sup> Avenue W	50	26	S-N W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Dover Court	Wilmington Way	Cul-de-sac	38-90	20-66	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

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ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	Eagles Nest Drive	Blue Heron Drive	Dead End (12697 Eagles Nest Dr)	45-120	20-25	W-E SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	East Horizon Drive	SR 525	West Horizon Drive	40		W-E																		Check with the City for requirements.
Local Access	East Horizon Drive	West Horizon Drive	East Horizon Drive	40		W-E																		Check with the City for requirements.
Local Access	East Horizon Place	East Horizon Drive	Cul-de-sac	40-80		SE-NW																		Check with the City for requirements.
Local Access	Evergreen Drive	Cyrus Way	Dead End (12333 Evergreen Dr)	60		SW-NE																		Check with the City for requirements.
Local Access	Evergreen Drive	Cyrus Way	SR 525	60	35	W-E/ S-N																		Check with the City for requirements, two projects have been identified in the BTW Plan.
Local Access	Finch Street	Eagle Nest Drive	Dead End (4502 Finch Street)	45	25	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Front Street	Dead End (Lighthouse Park)	Park Avenue	60		S-N																		Check with the City for requirements.
Urban Collector	Goat Trail Road	70 <sup>th</sup> Street SW	Goat Trail Road	40 – 60	28	W-E																		Right of Way will be required to be dedicated. Check with City on requirements, a project has been identified in the BTW Plan.
Urban Collector	Goat Trail Road	8 <sup>th</sup> Drive	Washington Avenue	36 - 72	24	W-E/ S-N																		Right of Way will be required to be dedicated. Check with City on requirements, a project has been identified in the BTW Plan.

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ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	Graham Way	84 <sup>th</sup> Street SW	Cul-de-sac	60-80		W-E S-N																		Check with the City for requirements.
Local Access	Harbour Heights Drive	50 <sup>th</sup> Place W	Beverly Park Road	60	35	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Harbour Heights Parkway	Harbour Pointe Boulevard	Cul-de-sac	60	40	S-N W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Harbour Place	Paine Field Boulevard	Harbour Pointe Boulevard North	60 – 75	33-57	W-E/ S-N																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	Harbour Place	Harbour Place	Mukilteo Speedway			S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Urban Collector	Harbour Pointe Boulevard North	SR 525	Harbour Place	60-75	33-55	S-N																		Check with the City for requirements.
Urban Collector	Harbour Pointe Boulevard North	48 <sup>th</sup> Avenue W	Harbour Place	80 – 82	43-72	S-N																		Check with the City for requirements, a project has been identified in the BTW Plan.
Urban Collector	Harbour Pointe Boulevard North/SW	48 <sup>th</sup> Avenue W	Harbour Reach Drive	80	42-52	S-N W-E																		Check with the City for requirements.
Urban Collector	Harbour Pointe Boulevard SW	Harbour Reach Drive	SR 525	60 – 100	60-80	S-N																		Right of Way will be required to be dedicated. Check with City on requirements, a project has been identified in the Six Year TIP, the City's Comprehensive Plan, and the BTW Plan.
Urban Collector	Harbour Reach Drive	Harbour Pointe Boulevard SW	Chennault Beach Rd	60 – 75	33-72	W-E																		Right of Way may be required to be dedicated. Check with City on requirements, a project has been identified in the BTW Plan.



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ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Urban Collector	Harbour Reach Drive	Beverly Park Road	Harbour Pointe Boulevard North	60 - 134	31-67	W-E																		Right of Way may be required to be dedicated. Check with City on requirements, a project has been identified in the Six Year TIP, the City's Comprehensive Plan, and the BTW Plan.
Local Access	Hartford Way	Wilmington Way	Camden Place	45	25	SW-NE SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Highland Terrace Court	Goat Trail Road	Cul-de-sac	50-100	26-85	S-N W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Hill Street	Dead End (1009 Hill St)	Cul-de-sac	50-100	24-76	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Holyoke Street	Wilmington Way	Concord Way	40	20	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Hummingbird Lane	Blue Heron Boulevard	Dead End (12501 Hummingbird Ln)	45	25	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Hummingbird Lane	Finch Street	Blue Heron Boulevard	45	25	W-E SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Ironwood Lane	61 <sup>st</sup> Avenue W	Clubhouse Lane	50	25	W-E S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Kay Way	Central Drive	Canyon Drive	60-70		W-E																		Check with the City for requirements.
Local Access	Lamar Drive	Mukilteo Boulevard/ 5 <sup>th</sup> Street	Debreton Lane	40		W-E SE-NW																		Check with the City for requirements.



FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	Leslie Lane	Mukilteo Boulevard/ 5 <sup>th</sup> Street	Cul-de-sac	87-177 (part of 5 <sup>th</sup> ROW)	20-66	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Lincoln Avenue	2 <sup>nd</sup> Street	5 <sup>th</sup> Street	60	28-40	W-E																		Check with the City for requirements.
Local Access	Lincoln Avenue	5 <sup>th</sup> Street	6 <sup>th</sup> Street	60	24-34	W-E																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	Loveland Avenue	2 <sup>nd</sup> Street	3 <sup>rd</sup> Street	60		W-E																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	Loveland Avenue	3 <sup>rd</sup> Street	6 <sup>th</sup> Street	60		W-E																		Check with the City for requirements.
Urban Major Collector	Loveland Avenue	8 <sup>th</sup> Drive	9 <sup>th</sup> Street	60		W-E																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	Loveland Avenue	9 <sup>th</sup> Street	Cul-de-sac	60-90		W-E																		Check with the City for requirements.
Local Access	Lumley Avenue	Goat Trail Loop Road	19 <sup>th</sup> Street	50	26	W-E SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

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ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	MacArthur Lane	Chennault Beach Drive	Dead End (10521 Macarthur)	60-80		SE-NW																		Check with the City for requirements.
Urban Major Collector	Marine View Drive	Chennault Beach Drive	66 <sup>th</sup> Place W	60	25	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Marine View Drive	66 <sup>th</sup> Place W	Cul-de-sac	50-90	25-75	W-E S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Mukilteo Lane	Park Avenue	Mukilteo Boulevard/ 5 <sup>th</sup> Street	38-70		S-N SW-NE																		Check with the City for requirements.
Local Access	Naketa Lane	84 <sup>th</sup> Street SW	Cul-de-sac	50-100	25-30	W-E S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Northport Drive	Hartford Way	Possession Way	45	25	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Northport Drive	Possession Way	Arbors Circle	50	24	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	Osprey Lane	Blue Heron Boulevard	Dead End (4886 Osprey Lane)	35	24	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Pacific Place	Beverly Park Road	Cul-de-sac	60-100	24	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Park Avenue	Front Street	First Street	60	28-47	W-E																		Check with the City for requirements.
Local Access	Park Avenue	2 <sup>nd</sup> Street	3 <sup>rd</sup> Street	50 – 60	30	W-E																		Property on SE corner of Park/2 <sup>nd</sup> required to dedicate 10 feet of Right-of-Way. Check with City on other requirements, a project has been identified in the BTW Plan.
Local Access	Park Avenue	5 <sup>th</sup> Street	7 <sup>th</sup> Street	60		S-N																		Check with the City for requirements.
Local Access	Park Avenue	9 <sup>th</sup> Street	Dead End (1004 Park Ave)	60		W-E																		Check with the City for requirements.
Local Access	Pointes Drive	Possession Way	Harbour Reach Drive	55-85	20-60	S-N Sw-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Possession View Lane	Washington Avenue	Goat Trail Road	50 – 60		S-N																		Right of Way may be required to be dedicated. Check with City on requirements, a project has been identified in the BTW Plan.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	Possession Way	Harbour Pointe Boulevard SW	Harbour Reach Drive	53 – 60	30-55	NW-SE																		Right of Way may be required to be dedicated. Check with City on requirements, a project has been identified in the BTW Plan.
Local Access	Preswick Lane	Bayview Drive	59 <sup>th</sup> Avenue W	50	25	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Urban Major Collector	Prospect Avenue	2 <sup>nd</sup> Street	5 <sup>th</sup> Street	30		W-E																		Check with the City for requirements.
Local Access	Prospect Avenue	6 <sup>th</sup> Street	Dead End (621 Prospect Ave)	30-55		W-E																		Check with the City for requirements.
Local Access	Randolph Avenue	Ridge Street	Dead End (1334 Randolph Ave)	50	24	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Ridge Street	Campbell Avenue	Dead End (1120 Ridge St)	60	31	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Russell Road	SR 525	Dead End (4416 Russell Rd)	60		SE-NW																		Check with the City for requirements.
Local Access	Saint Andrews Drive	116 <sup>th</sup> Street SW	Harbour Pointe Boulevard	60	36	S-N W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Sandpiper Lane	Finch Street	Dead End (12613 Sandpiper Ln)	35	25	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Scurlock Lane	Mukilteo Boulevard/ 5 <sup>th</sup> Street	Dead End (1429 Scurlock Ln)	178-422 (part of 5 <sup>th</sup> St ROW)	20	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

FUNCTIONAL CLASSIFICATION	STREET NAME	FROM	TO	APPROX. TOTAL EXISTING RIGHT-OF-WAY	APPROX. EXISTING CURB TO CURB WIDTH	CROSS-SECTION DIRECTION	BEHIND SIDEWALK	SIDEWALK	LANDSCAPING	CURB	PARKING	BICYCLE LANE	TRAVEL LANE	CENTER TURN LANE	TRAVEL LANE	BICYCLE LANE	PARKING	CURB	LANDSCAPING	SIDEWALK	BEHIND SIDEWALK	REQUIRED RIGHT-OF-WAY	PLANNED CURB TO CURB WIDTH	NOTES
ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	Smugglers Cove Lane	84 <sup>th</sup> Street	Smugglers Cove Lane	50	27	W-E S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	South Road	Evergreen Drive	Harbour Reach Drive	60 – 93	27 - 31	S-N																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	Southport Drive	Concord Way	Possession Way	45	25	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Surrey Lane	92 <sup>nd</sup> Street SW	Cul-de-sac	50-100	25-77	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Principal Arterial	SR 525	81 <sup>st</sup> Place SW	76 <sup>th</sup> Street SW	90 – 305	33-61	W-E																		Check with the City for requirements, a project has been identified in the BTW Plan.
Principal Arterial	SR 525	86 <sup>th</sup> Street	81 <sup>st</sup> Place SW	100	33-71	W-E																		Check with the City for requirements, a project has been identified in the BTW Plan.
Principal Arterial	SR 525	92 <sup>nd</sup> Street SW	86 <sup>th</sup> Street	90 – 100	38-64	SW – NE																		Check with the City for requirements, a project has been identified in the BTW Plan.
Principal Arterial	SR 525	Paine Field Boulevard	92 <sup>nd</sup> Street SW	77 – 152	28-93	SW-NE																		Check with the City for requirements, a project has been identified in the BTW Plan.
Principal Arterial	SR 526	44 <sup>th</sup> Avenue W	40 <sup>th</sup> Avenue W	80 – 133	70 - 76	NW-SE																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	Terrace Place	Randolph Avenue	Hill Street	50	26	S-N																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Village Center Place	Harbour Pointe Boulevard	Pointes Drive	75	22-54	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

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ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	Washington Avenue	Goat Trail Road	6 <sup>th</sup> Street	60	19-32	W-E																		Check with the City for requirements, a project has been identified in the BTW Plan.
Local Access	Washington Avenue	Dead End (202 Washington Ave)	4 <sup>th</sup> Street	40-50		W-E																		Check with the City for requirements.
Local Access	Washington Avenue	15 <sup>th</sup> Place	Possession View Lane	30-55		W-E																		Check with the City for requirements.
Local Access	Washington Avenue	Clover Lane	SR 525	35-60		W-E																		Check with the City for requirements.
Local Access	Washington Court	Washington Avenue	Cul-de-sac	50-90	24-66	SW-NE																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Washington Place SW	Washington Court	Cul-de-sac	50-90	24-66	SE-NW																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.
Local Access	Webster Street	5 <sup>th</sup> Street	Dead End (917 Webster St)	60		W-E																		Check with the City for requirements.
Local Access	Webster Way	64 <sup>th</sup> Place W	63 <sup>rd</sup> Place W	60		S-N																		Check with the City for requirements.
Local Access	West Horizon Drive	East Horizon Drive	Dead End (1798 West Horizon Dr)	40-70		W-E																		Check with the City for requirements.
Local Access	Whittington Street	Campbell Street	Dead End (915 Whittington St)	60		S-N																		Check with the City for requirements.

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ARTERIAL STREETS AND LOCAL PRIMARY STREETS																								
Local Access	Wilmington Way	Brighton Place	Bridgeport Place	45	25	W-E																		Sidewalks, driveways and curb ramps will be required to be upgraded to meet ADA Standards if not compliant. No other improvements are required, street is built out.

# Appendix G - Record Drawings (As-Builts)

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Record drawings are required prior to request for final inspection or issuance of Certificate of Occupancy for all right-of-way construction projects and for surface water drainage systems that connect to City infrastructure.

- B. Record drawings should accurately reflect revisions made to approved plans during construction. The record drawings should locate all newly installed, existing, and abandoned utilities encountered during construction, but not shown on the approved plans.
- C. Record drawings must be stamped, signed, and dated by a State of Washington Registered Engineer.
- D. As-constructed survey information provided on a record drawing shall be provided by a licensed land surveyor. Information from sources such as the contractor's red-lined drawings, for which the surveyor is not responsible, shall be clearly noted/identified on the face of the record drawings.
- E. Two hard copies of the preliminary Record Drawings shall be submitted to the City for review. Any variance from the plans needs to be noted on the appropriate sheet with related design object changed to reflect the field survey.
- F. The Permittee shall provide the City inspector preliminary record drawings on paper. Once the City approves the preliminary submittal, the Permittee provides the final drawings in the following formats. Each plan sheet shall bear the engineer and the surveyor stamps, signature, and date signed:
  - One full-size paper;
  - One Mylar (24" by 36");
  - AutoCAD format; and
  - PDF electronic file
- F. Each sheet of the record drawings shall include the following statement, preferably located in the bottom right hand corner of the each sheet.

"These plans are record drawings and the information shown accurately reflects existing field conditions as of this date \_\_\_\_."