CHAPTER 1

GENERAL CONSIDERATIONS

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City of Marysville
Public Works / Community Development

CHAPTER 1 – GENERAL CONSIDERATIONS

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ENGINEERING SERVICES PLAN REVIEW PROCESS

The Engineering Services plan review process is independent of the review processes of all other City departments. Therefore, plans or other materials requiring engineering review and approval shall be submitted directly to Engineering Services. The remainder of this section describes the process and the minimum requirements for submittals.

1-100 PREDESIGN MEETING

Applicants are encouraged to meet with the Engineering Services Staff prior to final design and plan submittal. All plans submitted to Engineering Services will receive a preliminary review to make sure that they adequately address the minimum requirements of this manual and all applicable development requirements. Any such plans not meeting these requirements will be returned to the applicant or his designated contact person as unacceptable for review.

1-101 PLAN REVIEW FEES

Engineering plan review fees are required separate from other department review fees. The plan review fee shall be paid at the time of submittal. The review process begins when payment of the plan review fee has been made. The permit fee shall be paid prior to the issuance of the permit.

1-102 PLAN CHECKLISTS

The Engineering Service's "Plan Review Checklists" are included in this publication (Appendix A) as a guide to help the engineer in the plan preparation process. The City recommends that these checklists be used by the engineer to help facilitate the plan review process.

1-103 PLAN APPROVAL

Each sheet of the plans shall have the City of Marysville approval block located within or adjacent to the design engineer's title block. The plans shall be considered approved by the City when the

approval block on each sheet has been signed by the Engineering Services Staff. If at any time a significant error or omission is discovered, the City may withdraw approval and order the work stopped pending correction of the error.

1-104 ENGINEER'S REGISTRATION STAMP

Engineering plans and/or calculations submitted for approval shall be stamped by a Washington State licensed professional engineer.

1-105 RIGHT-OF-WAY DEDICATIONS

All required right-of-way dedications shall be recorded by Snohomish County prior to final plan approval. All easements shall be completed in a format to the City's requirements. Easements for utilities shall be drafted and signed by the property owner and given to the City prior to final plan approval. Upon completion of the project, the original easement shall be modified, if necessary, and then recorded at the property owner's expense. All such easements and dedications shall be clearly shown on the engineering plans. (See Appendix C for sample forms.)

1-106 ALTERNATIVE METHODS OR CONSTRUCTION MATERIALS REQUEST

When circumstances warrant, the applicant may request to vary from the design standards set forth in this manual. The applicant should be aware that the City of Marysville design standards are considered minimum requirements. It will be up to the applicant to provide the justification for the request. The applicant shall submit a completed "Alternative Methods or Construction Materials Request" form to Engineering Services. The request will be reviewed by all applicable City departments. The final decision will be by the Engineering Service Manager. (See Appendix C for the "Alternative Methods or Construction Materials Request" form.)

1-107 VARIANCES

A. Variances from these Standards may be granted by the Public Works Director or designee upon evidence that such variances are in the public interest and that requirements for safety, function, fire protection, appearance and maintainability based upon sound engineering judgment are fully met. Detailed procedures for requesting variances and appeals variance decisions are contained in the Marysville Municipal Code. Variances must be approved prior

to approval of the engineering plans for construction. Any anticipated variances from these Standards, which do not meet the International Fire Code, shall also require concurrence by the Fire Marshal.

B. Questions regarding interpretation of these Standards may be directed to the Public Works Director or designee.

1-108 PLAN REVIEW SEQUENCE

The following sequence shall be followed when engineered plans are required for review by the engineering services:

Engineering Plans: Eight (8) copies of engineering plans for private development proposals shall be prepared and submitted to the City of Marysville. At a minimum the plans shall meet the following:

1. A professional engineer licensed in the state of Washington shall prepare the engineering plans. The plans must be reviewed and approved by the City of Marysville prior to beginning construction.

2. The plans must be signed and stamped by the responsible professional engineer prior to submittal to the City of Marysville.

3. The plans shall 24"x36" (unless otherwise requested), dark line on light background. Engineering scale shall be required.

4. At a minimum, the plans title block shall include the project name and number, applicant's/developer's name, and the name, address, date and signature of the responsible professional engineer.

5. All topographic features within and adjacent to proposed improvements and within sufficient area to assess impacts of slopes, drainage, access, future extensions, etc. shall be incorporated into the plans.

6. All existing and proposed public and private utilities, including water and sewer, telephone, power, gas, cable, fiber optics, and any other utilities within the project area shall be shown on the plans.

7. Delineate existing and proposed drainage facilities such as culverts, catch basins, ditches, swales, ect., indicate direction of flow, size, type of pipe, invert and rim elevations.

8. Identification of adjacent roads, neighborhoods, addresses or any other information to facilitate locations and future references.

9. Profile drawings shall have a horizontal scale and the ratio of the vertical to the horizontal scale shall be 1V:10H.

10. The plans shall clearly identify all existing and proposed improvements, such as the right-of-way and/or easement lines, the roadway, sidewalks, shoulders, utilities, drainage facilities, rock facings, retaining walls and driveways.

11. Curb return elevations at a minimum shall be shown at quarter points at all intersections to verify drainage and to facilitate a smooth transition.

12. Roadway profiles shall include existing and proposed centerline elevations at 50-foot stations or less; centerline grades and vertical curves, including stations and elevations at PVC's, PVI's, and PVT's.

13. Detail drawings shall contain adequate dimensions, sections, views, notes, and call outs to construct the structure, or permit preparation of detailed shop drawings by the fabricator when necessary. Use of very light gray shading and very light hatching is acceptable, provided they do not obscure data and other pertinent information at full and reduced scale.

14. The plans must include existing and proposed monuments. The roadway centerline, easements, and other pertinent data will be references to existing monuments.

15. The City Road Engineer and Development Services engineer may require additional plan elements in addition to those cited above.

GENERAL PLAN REQUIREMENTS

1-200 GENERAL INFORMATION ON PLANS

Plans submitted for review and approval by Engineering Services shall include the following minimum requirements. Any plans submitted not meeting these requirements will not be reviewed further and will be returned to the design engineer.

1. All plans and calculations shall be prepared, stamped, signed, and dated by a Washington State licensed professional civil engineer.

2. Property surveys shall be performed and stamped by a Washington State licensed professional land surveyor.

3. All plans and calculations shall be neat, uncluttered, legible, and in conformance with the requirements herein.

4. Where applicable, shop drawings shall be submitted for review and approval prior to plan approval.

5. All plan sets shall reference the City of Marysville Standard Details applicable for the project. The details shall be located on separate plan sheets. Where a particular item is called out on the plans, a note shall be included on the drawing identifying the applicable City Standard Detail referencing the plan sheet the detail is located on and the City Standard number (i.e., for a fire hydrant located on the plans, the note should read "SEE CITY STANDARD PLAN 2-060 ON SHEET 3 OF 3"). All other required details not standardized by the City of Marysville shall be shown on a separate detail sheet.

6. Engineering plans submitted for approval shall be on 24 x 36 inch reproducible black-line mylar. No stick-on type material will be allowed.

7. An approval block shall be provided for the Fire Marshal on the water plans or other applicable plans. An approval block shall also be provided for the Post Master on applicable plans.

8. An Acknowledgement Block for Engineering Services Manager with note "Approval for 18 months from date of signature", shall be located in right corner of the plan sheets.

9. North shall be shown up or to the right on the plans, and in no case will north be shown in opposing directions on the same or connecting sheets. The north arrow shall be located in the upper right corner of all plan sheets.

10. Datum shall be NAD 83 NAVD 1988 unless otherwise approved by the City of Marysville.

11. The scale shall be indicated directly below the north arrow and shall be only 1"=20', 1"=30'. Any variation to the scale must be approved by the City in advance of plan submittal.

12. A vicinity map shall be located on the lower right of the first sheet. The scale shall be a minimum of 1" = 1000' and with an approximate 1 square mile with the project site approximately centered. A north arrow shall be on the map. The site address shall be shown below the vicinity map.

13. A brief legal description of the site, in enough detail to locate the property, including parcel number, 1/4 section, township, and range shall be located below the vicinity map.

14. Indicate City-established benchmark (BM) used with number and elevation.

15. Show current zoning of site and of adjacent properties.

16. Lot size(s) with perimeter distances and bearings of the site shall be shown on the plans.

17. Project name shall be included in the title block.

18. Page title (For example: Site plan, Drainage plan…).

19. Show owner/developer's name, address, and phone number in the title block.

20. Show engineer's name, address, and phone number in the title block.

21. A note shall be placed on all sheets that states "The Contractor shall verify the location of all existing utilities prior to any construction. Agencies involved shall be notified within a reasonable time prior to the start of construction." All plan sheets shall also include the prominent note "Call 1-800-424-5555 Before You Dig".

22. All applicable existing and proposed appurtenances shall be clearly shown.

23. A complete legend for line types, hatches, and symbols on plans and profiles.

24. Proposed and existing rights-of-way and easements shall be clearly identified and dimensioned. New public utility easements shall be a minimum of 40 feet in width. Pipes shall be centered in the easement. Show all Snohomish County recording numbers for existing easements. All easements required from adjacent properties shall be obtained prior to plan approval by the City. (See Section 1-105)

25. Show all pertinent existing and finish elevations.

26. Show existing natural drainage ways such as swales, ditches, etc. Show path of flow with arrows and elevations.

27. Show lakes, rivers, streams, flood plains, wetlands, sensitive slopes, and other sensitive areas.

28. Show limits and elevations of 100-Year Flood Plain, including delineation of the floodway and flood fringe where applicable.

29. For some projects covering a large area or containing a large number of sheets, the City may require a "Key Map" page to be included. The "Key Map" page shall show the overall general location of proposed improvements, where each page or sheet number can be found, and be at a horizontal scale of 1" = 100'.

30. Engineering plan sheets shall be numbered sequentially i.e.: sheet 1 of 20, sheet 2 of 20, etc. ending in sheet 20 of 20.

31. Additional plan set requirements are located in Chapter 3, Appendix A.

1-201 PLAN/PROFILE SHEETS

1. Off-site plans (public right-of-way) shall be on plan/profile sheets. Each sheet shall have the corresponding plan/profiles on the same sheet with aligned stationing. The consistency between the horizontal scale and the vertical scale shall be on a ratio of 10 to 1 (i.e., 1" = 20' horizontal; 1" = 2' vertical).

2. On-site plans are generally only prepared on plan sheets. When cross sections for grading plans or profiles for sanitary sewer lines are required, the profile shall be drawn on the plan/profile sheets. The consistency between the horizontal scale and the vertical scale shall be on a ratio of 10 to 1 (i.e., 1" = 20' horizontal; 1" = 2' vertical).

1-202 PROJECT RECORD DRAWING REQUIREMENTS

Certified record drawings (AutoCADD and Mylar) shall be provided by a Washington State licensed professional civil engineer and shall accurately reflect all field design revisions made during the construction process. All required record drawing information shall be clearly shown on a copy of the design mylar drawings approved for construction by the City of Marysville. Each sheet of the record drawing plans shall include the following statement along with the engineer's professional stamp, signed and dated, located at the bottom right-hand corner of the sheet when possible:

"These plans are **record drawings,** and the information shown accurately reflects existing field conditions as of this date: _____."

1. Preliminary Record Drawing Plan Review Process

   Submit 3 PRINTS FROM THE PLOTTED DIGITIAL FILE for review to the Land Development Division. See Format Requirement.

   If review of the preliminary Record Drawings reveal errors and/or omissions, the drawings will be returned to the Engineer/Surveyor for corrections. The Engineer/Surveyor shall make all corrections in the digital copy, re-plot and resubmit three revised preliminary Record Drawings and redlines for re-review. Upon approval of preliminary Record Drawings, the Engineer/Surveyor will be notified to proceed with the "Final Submittal".

The record drawing plans should include all existing or abandoned utilities that were encountered during construction that were not shown on the design plans. The following required information is intended to provide a minimum guide to the engineer of record and should be used along with good engineering practices as the type of project and situation warrants.

Public/Private Streets:

- Center line elevations at 50 foot intervals
- Center line slopes and vertical curve data
- Gutter line elevations at 50 foot intervals (if not standard crown)
- Gutter line slopes and curve data (if not standard crown)
- Gutter line elevations at intersections and as applicable
- Driveways: Locations, lengths, and types
- Channelization: Locations and types
- Signing: Locations and types
- Illumination: Locations, types, heights, and wattages
- Service cabinets: Locations and types
- Junction boxes: Locations and types
- Conduits/Wire: Locations, types, sizes, and depths
- Controller cabinet: Locations and types
- Signalization: Locations, types, heights, and foundation depths and sizes
- Right-of-Way: Locations and widths
- Easements: Locations, widths, and county recording number
- Location, types, and sizes of gas, power, phone, and cable TV lines
- Center line monument locations (property monuments if a plat)
- Sidewalks/planter strip: Locations and width

Storm Drainage:

- Manholes/catch basins: Locations, types, rim/invert elevations
- Storm lines : Arterials, locations, lengths, slopes, and sizes
- Public utility easements: Locations and widths
- Retention/detention systems:

– Volume of storage provided
− Storage elevation
− Storage/ponding limits
− Overflow elevation and location
− Discharge control orifice size
− Roof drain connections
− Bypass area
− Stabilization/erosion control

- All storm drainage retention/detention systems shall include the following statement: "The storm drainage system has been constructed in conformance with the approved plans and is functioning as designed."
- Connections and/or points of discharge to Critical Areas

Water:

- Water lines: Materials, lengths, sizes, and locations
- Water valves: Locations and types
- Fire hydrants: Locations and types
- Blow-offs: Locations and sizes
- Air and vacuum relief valve: Locations
- Pressure reducing valve: Locations
- Water main blocking: Locations
- Water meters: Sizes and locations
- Water services: Sizes, locations, and materials
- Public utility easements: Locations and widths
- Detailed connections: As applicable
- Fire sprinkler connection:
  – Location of line
  – Size of line
  – Location of detector vault
  – Location of service valve
  – Location of fire department connection
  – Location of post indicator valve

Sanitary Sewer:

- Manholes: Locations, types, rim/invert elevations
- Sewer line: Materials, locations, lengths, slopes, and sizes
- Side sewers: Materials, locations relative to property lines and sewer manholes in the street, lengths, slopes, sizes, depth below finish grade at property line, and inverts
- Public utility easements: Locations and widths
- TV report: Compare TV reports to side sewer locations

2. Final Record Drawing Plan Submittal

The Final "Record Drawing" plan shall be submitted to the Land Development Division. See Format Requirements.

Each drawing, except for the Digital file, shall bear the P.E./P.L.S. Stamp, Signature and Date and be reproduced on the following media:

Digital file on CD or DVD

Full size MYLAR*

Three sets of full size PRINTS, FOLDED.

*Sepia Mylars or Xerox type copies will not be accepted as a substitute for Mylar.

A. Format Requirements

i. Digital File Format

a. AutoCAD Release 2008 or prior ".DWG" format, including all support files required to display or plot the files in the same manner as they were developed shall be delivered along with these files. These files include but are not limited to Customized Line Styles Libraries, Cell Libraries, Font Libraries, Pen Tables and Referenced Files, (AutoCAD) Block Libraries, Font Files, Menu Files, Plotter Setup and Referenced Files. Do not include P.E./P.L.S. stamps, signature and border files.

b. Portable Document Format (PDF) as exported from the Record Drawings.

c. The files will be submitted on a CD or DVD. Each disc will be labeled with the project name and the name of the company that prepared them.

d. All Record Drawing changes will be made in the digital format.

Changes to text, for example: invert elevations, dimensions, notes, etc. will be lined out with the As-Built text placed above it.

Changes made to Graphic features, for i.e.: pipe, catch basins, hydrants, etc.

shall be moved to reflect their accurate As-Built locations.

e. The drawing will be at full scale. Each sheet shall be identified with the words "Record Drawings" in bold block letters 3/8" plotted height placed above the title block.
   The date of completion and the words "REVISED Record Drawing" shall be placed in the revision block.

f. The drawing will be established in model space using the state plan coordinate system, Washington North Zone 4601, with horizontal survey control of NAD 83 and vertical control of NAVD 88, tied to any 2 City of Marysville Horizontal Control Monuments.

g. A detailed digital and hard copy list of the Record Drawings - water, sewer & storm, lighting, signal and signal component layers/levels and their contents. The digital copy will be included with and in the same format as the drawing file.

ii. Hard Copy Format

a. Three sets of prints derived from the Record Drawing digital file will include the Stamp, Signature and Date of the Professional Engineer or Professional Land Surveyor that prepared the Record Drawing document.

b. Record Drawing submittals are to include <u>all</u> sheets of original city approved construction drawings except TESCP and City Standard Details, i.e.: Title sheet, Plan(s), Profile(s), Sensitive Areas/Wetlands and Site Specific Details.

Plan sheets are subject to a physical test that includes wet/dry erasers.

Final corrected plans for archiving shall be original documents that meet the minimum requirements listed in this section that are produced in a manner that ensures durability, resistance to damage from use or exposure to water or light, and allows for the detection of any alteration. The plans shall be of suitable quality for producing legible prints through reductions, scanning, microfilming or other standard copying procedures.

Acceptable processes to create record plans include black ink on 4 mil polyester drafting film (mylar), photographic mylar, mylar created using an ink jet printer process, or other processes approved by the Engineer. The following criteria shall be used to evaluate acceptability:

- Substrates (such as polyester, polyethylene, or polypropylene) shall be durable and capable of producing copies without loss, distortion or transfer of print images. Ink shall be pigmented and ultraviolet (UV) resistant.

- Drawing material used for final corrected plans shall ensure that the documents are stable, reproducible document for a minimum of 50 years.

Unacceptable processes to create record drawings include, but are not limited to:

- Mylars that have material affixed by adhesive.

- Mylars that have shading, except for detail drawings as allowed in this section and when very light shading is used to delineate edge of existing pavement/surface.

- Electrostatic mylars such as a xerographic process or mylars created by heat sensitive electrostatic plotting, except as approved by the Engineer.

- Ammonia process (sepia type) mylars.

1-203 GENERAL PLAN NOTES

The following general notes shall be shown on the plans.

GENERAL NOTES:

1. All work in City right-of-way requires a permit from the City of Marysville. Prior to any work commencing, the general contractor shall arrange for a preconstruction meeting at the Development Services Center to be attended by all contractors that will perform work shown on the approved engineering plans, representatives from all applicable utility companies, the project owner and appropriate city staff. Contact Development Services at (360-363-8100) to schedule the meeting. The contractor is responsible to have their own set of approved plans at the meeting.

2. After completion of all items shown on these plans and before acceptance of the project the contractor shall obtain a "punch list" prepared by the City's inspector detailing remaining items of work to be completed. All items of work shown on these plans shall be completed to the satisfaction of the City prior to acceptance of the water, sanitary sewer and storm systems.

3. All materials and workmanship shall conform to the Standard Specifications for Road, Bridge, and Municipal Construction (hereinafter referred to as the "Standard Specifications"), Washington State Department of Transportation and American Public Works Association, Washington State Chapter, latest edition, unless superseded or amended by the City of Marysville City Engineering Design and Development Standards (hereinafter referred to as the "City Standards").

4. All work within the development and City right-of-way shall be subject to the inspection of the City engineer or designated representative.

5. 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 _____.

6. 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 _____.

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 is _____. Phone _____, Mobile phone _____, emergency phone _____.

8. The Construction Stormwater Pollution Prevention Plan (SWPPP) Best Management Practices (BMP's) shall be constructed in accordance with the approved SWPPP prior to any grading or extensive land clearing. These facilities must be satisfactorily maintained until construction and landscaping is completed and final stabilization has occurred. Sediment laden waters shall not enter the city stormwater drainage system or a natural drainage system.

9. The contractor shall keep two sets of plans on site at all times for recording record drawing information; one set shall be submitted to the project engineer, and one set shall be submitted to the City engineer at completion of construction and prior to final acceptance of work.

10. Prior to construction the owner and/or contractor shall notify the project engineer and the City engineer 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.

11. Any revisions made to these plans, or changes to the design must be reviewed and approved by the developer's engineer and the City prior to any implementation in the field. The City shall not be responsible for any errors and/or omissions on these plans.

12. The contractor shall have all utilities verified on the ground prior to any construction. Call (811) at least two working days in advance. Prior to construction the owner and/or contractor shall notify the project engineer and the City engineer 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.

13. City of Marysville horizontal datum shall be NAD 83, and the vertical datum shall be NAVD 88, in Washington State Plane Coordinates (feet), Washington North Zone 4601. A list of benchmarks is available through the Public Works Department.

14. Temporary street patching shall be allowed for as approved by the City Engineer. Temporary street patching shall be provided by placement and compaction of ATB or Class B asphalt concrete. Contractor shall be responsible for maintenance as required.

15. Provide traffic control plan(s) in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) as required.

16. It shall be the responsibility of the Contractor to have a copy of these approved plans on construction site at all times.

17. Any structure and/or obstruction that requires removal or relocation relating to this project shall be done so at the developer's expense.

18. Locations of existing utilities are approximate. It shall be the contractor's responsibility to determine the true elevations and locations of hidden utilities. All visible items shall be the engineer's responsibility. Location of utilities shown on construction plans are based on best records available and are subject to variation. For assistance in utility location, call 1-800-424-5555.

19. The contractor shall install, replace, or relocate all signs, as shown on the plans or as affected by construction, per City Standards.

20. Power, street light, cable, and telephone lines shall be in a trench located within a 10-foot utility easement adjacent to public right-of-way. Right-of-way crossings shall have a minimum horizontal separation from other utilities (sewer, water, and storm) of 5 feet.

21. All construction surveying for extensions of public facilities shall be done under the direction of a Washington State licensed land surveyor or a Washington State licensed professional civil engineer.

22. During construction, all public streets adjacent to this project shall be kept clean of all material deposits resulting from on-site construction, and existing structures shall be protected as directed by the City.

23. Certified record drawings are required prior to project acceptance.

24. A NPDES Stormwater General Permit may be required by the Department of Ecology for this project. For information visit the Department of Ecology web site www.ecy.wa.gov/programs/wq/stormwater/construction/.

25. Any disturbance or damage to Critical Areas and associated buffers, or significant trees designated for preservation and protection shall be mitigated in accordance with a Mitigation Plan reviewed and approved by the City's Planning Division. Preparation and implementation of the Mitigation Plan shall be at the developer's expense.

26. 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.

27. Prior to commencement of framing, final drainage inspection and approval of the roof leader and positive footing systems shall be completed by the Building Department. Call 360-363-8100 to schedule the inspection.

1-204 ROADWAY PLAN NOTES

The following notes shall be shown on the plans.

ROADWAY NOTES:

1. Monuments shall be installed at all street intersections, at angle points, and points of curvature in each street. All boundary monuments must be installed according to the Washington State subdivision laws.

2. Curb and gutter installation shall conform to City Standard Detail 3-514.

3. Sidewalks and driveways shall be installed as lots are built on. Sidewalks and driveways shall conform to City Standard Detail 3-303-001 and -002. If asphalt is damaged during replacement of curb and gutter, the repair shall conform to City Standard Detail 3-514-001.

4. The surrounding ground (5 feet beyond the base) for all power transformers, telephone/TV pedestals, and street light main disconnects shall be graded to a positive 2 percent slope from top of curb.

5. Signage and traffic control devices are safety items and shall be installed prior to issuance of any certificate of occupancy or plat approval. However, in larger developments, exact locations of stop and yield signs may need to be determined after full buildout when traffic patterns have been established. In this case, contractor shall provide indicated "City-placed" signs, signposts, and brackets to the City sign specialist (425) 328-7954 for later installation by the City. All signage shall be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).

6. Prior to any sign or striping installation or removal the Contractor shall contact the City sign specialist (425) 328-7954 to arrange for an on-site meeting to discuss placement and uniformity.

7. New or revised stop signs or yield signs shall be advance warned using the procedure outlined in the MUTCD. Advance warning signs and flags shall be maintained by installer for 30 days and then removed.

1-205 STORMWATER PLAN NOTES

The following applicable notes shall be shown on the plans.

STORMWATER NOTES:

1. During construction, all existing and newly installed drainage structures shall be protected from sediments.

2. All storm manholes shall conform to City Standard Detail No.4-08-009. Flow control manhole/oil water separator shall conform to City Standard Detail No. 4-040-004.

3. Manhole ring and cover shall conform to City Standard Detail 4-08-009 and 4-080-15 thru 4-080-024. The cover shall be marked with "storm" or "drain" in 2-inch raised letters. Minimum weight of the frame shall be 210 pounds. Minimum weight of the cover shall be 150 pounds.

4. Catch basins shall by Type I unless otherwise approved by the City Engineer or Designated representative. Type I Catch basins shall conform to City Standard Detail No.4-080-007 and 4-080-008 and shall be used only for depths less than 5 feet from top of the grate to the invert of the storm pipe.

5. Catch basins Type II shall conform to City Standard Detail No. 4-08-009 and shall be used for depths greater than 5 feet from top of the grate to the invert of the storm pipe.

6. Cast iron or ductile iron frame and grate shall conform to City Standard Detail No.4-080-022. Grate shall be marked with "drains to stream". Solid catch basin lids (square unless noted as round) shall conform to WSDOT Standard Plan B-30.20-02 (Olympic Foundry No. SM60, SM52, or SM44 or equal). Vaned grates shall be required on all storm structures when roadway profile is greater than 3% and shall conform to WSDOT Standard Plan B-30.30-01 (Olympic Foundry No. SM60V or equal). Grates located in the gutter flow line shall be depressed 0.1 feet below pavement level.

7. All catch basins and manholes located outside of paved areas, shall be placed in a six foot square by four inch thick concrete pad.

8. All catch basins and manholes shall have locking lids. Rolled grates are not approved for use outside of the City right-of-way or for use with Type II manholes.

9. 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.

10. Trenching, bedding, and backfill for pipe shall conform to City Standard Detail No. 3-703-002 and-003.

11. Trench backfill of new utilities and stormwater drainage system features 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)C - Method B as defined in the current edition of the WSDOT Standard Specifications for Road, Bridge, and Municipal Construction. For permeable pavement and other stormwater BMP's designed to infiltrate subgrade compaction should be "firm and unyielding" (qualitative), and 90- 92% Standard Proctor (quantitative). Do not allow heavy compaction due to heavy equipment operation. The subgrade should not be subject to truck traffic.

12. Storm pipe shall be a minimum of 10 feet away from building foundations and/or roof lines.

13. After all other utilities are installed and prior to asphalt work, all storm pipe shall pass a low pressure air test in accordance with 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. Products used to seal the inside of the pipe are not to be used to obtain the air test.

14. All temporary sedimentation and erosion control measures, and protective measures for critical areas, preserved native vegetation and significant trees shall be installed prior to initiating any construction activities.

15. Stormwater facilities with side slopes steeper than 3:1 or with a maximum water depth greater than 3 feet shall require a powder or vinyl coated chain link perimeter fence per standard plans 3-501-007 and -008. Side slope averaging shall not be allowed. All inlet and outfall pipes shall have a trash rack installed and a mortared riprap headwall. Refer to storm drainage note 21.

16. 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 record drawing construction plans submitted to the City.

17. Storm water retention/detention facilities, storm drainage pipe and catch basins shall be flushed and cleaned by the developer prior to; City of Marysville final acceptance of the

project and; upon commencement and completion of the 2-year warranty period for the storm drainage system.

18. Unless otherwise noted, all storm sewer pipe shall be; (CP) non-reinforced concrete, ASTM C-14; (RCP) reinforced concrete for concrete pipe diameters 24" or greater, ASTM C-76; or (CMP) corrugated metal. CMP to be; galvanized steel with Treatment I asphalt coating or better; or corrugated aluminum; or AASHTO M274-70 aluminized steel. All pipes shall be installed with rubber gaskets as per manufacturers recommendations.

    Coverage Requirements for 12" diameter pipe:

    Backfill over pipe less than 12" requires RCP Class IV.
    Backfill over pipe less than 24" requires RCP minimum.
    Backfill over pipe greater than 24" requires 16 gage CMP minimum.

19. 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 modified as follows:

The second paragraph of Section 7-08.3(3) is deleted and replaced with the following:

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.

20. All non-perforated metal pipe shall have neoprene gaskets at the joints. O-ring gaskets may be used for type-F coupling band.

21. Culvert ends shall be beveled to match side slopes. Field cutting of culvert ends is permitted when approved by the City engineer or designated representative.

22. All field cut culvert pipe shall be treated as required in the Standard Specifications or General Special Provisions.

23. 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.

24. All landscaped and lawn areas, except areas within the dripline of preserved trees, shall be amended per BMP T5.13 Post Construction Soil Quality and Depth in Chapter 5, Volume V of the Stormwater Manual.

1-206 WATER SYSTEM PLAN NOTES

The following notes shall also be shown on the plans.

WATER SYSTEM NOTES:

1. Biological test samples will be taken by the City (or FMWC, VW or TCW when served by that purveyor) and paid for by the contractor.

2. Water mains shall have a minimum cover of 36 inches in improved right-of-way and a minimum of 48 inches in unimproved right-of-way and easements.

3. Pipe for water mains shall be ductile iron conforming to Section 7-09 of the Standard Specifications, Class 52 with tyton or approved equal joints. Pipe shall be cement lined in accordance with A.S.A. Specification A 21.4-1964.

4. Connections to existing water mains shall typically be wet taps through a tapping 'tee' and tapping valve and shall be made by a City-approved contractor. The tapping sleeve shall be epoxy coated or ductile iron. Stainless sleeves shall only be used on AC pipe. The City (or FMWC, VW or TCW when served by that purveyor) shall approve the time and location for these connections.

5. All water mains and appurtenances shall be hydrostatically tested at 200 psi in accordance with City Standards.

6. Fire hydrants shall be installed in accordance with City Standard Detail 2-060-001 and as directed by the City of Marysville Fire Code Official.

7. Valve marker posts shall be installed where valve boxes are hidden from view or in unpaved areas.

8. Resilient seated wedge gate valves shall be used for 10-inch mains and smaller. Butterfly valves shall be used for mains greater than 10 inches.

9. Pipe fitting for water mains shall be ductile iron and shall be mechanical joint conforming to AWWA Specification C111-72.

10. Water main pipe and service connections shall be a minimum of 10 feet away from building foundations and/or roof lines.

11. Where a water main crosses the Northwest Gas pipeline, the water line shall be cased with PVC pipe a minimum of 10 feet beyond each side of the gas line easement. Contact Williams Northwest Pipeline before the crossing is made.

12. Trenching, bedding, and backfill for water mains shall be installed in accordance with City Standard Detail 3-703-002 and-003.

13. All commercial and industrial developments, irrigation systems, and multi-family water service connections shall be protected by a double check valve assembly or a reduced pressure backflow assembly as directed by the City conforming to City Standard Details 2-153-001.

14. Any lead joint fitting disturbed during construction shall be replaced with a mechanical joint fitting at the contractor's expense.

1-207 SANITARY SEWER PLAN NOTES

The following applicable notes shall also be shown on the plans.

SANITARY SEWER NOTES:

1. Sanitary sewer pipe and side sewers shall be 10 feet away from building foundations and/or roof lines.

2. No side sewers shall be connected to any house or building until all manholes are adjusted to the finished grade of the completed asphalt roadway and the asphalt patch and seal around the ring are accepted.

3. After all other utilities are installed and prior to asphalt work, all sanitary pipes shall pass a low pressure air test in accordance with Section 7-17 of the "Standard Specifications". Products used to seal the inside of the pipe are not to be used to obtain the air test.

4. For commercial developments in which sources of grease and/or oils may be introduced to the City sanitary sewer system, a City approved grease interceptor shall be installed downstream from the source.

5. The City of Marysville Community Development Department shall be notified a minimum of 48 hours in advance of a tap or connection to an existing sanitary sewer main. The inspector shall be present at the time of the tap or connection.

6. The Contractor shall be fully responsible for the location and protection of all existing utilities. The Contractor shall verify all utility locations prior to construction by calling the Underground Locate Line at 1-800-424-5555 a minimum of 48 hours prior to any excavation.

7. Gravity sewer main with ≤5' of cover shall be D.I.P. Class 52; 5'-18' of cover shall be PVC, ASTM D 3034 SDR 35, or ASTM F 789 with joints and rubber gaskets conforming to ASTM D 3212 and ASTM F 477; >18' cover shall be D.I.P. Class 52, or C-900.

8. Precast manholes shall meet the requirements of ASTM C 478. Manholes shall be Type 1-48" manhole unless otherwise specified on the plans. Joints shall be rubber gasketed conforming to ASTM C 443 and shall be grouted from the inside. Lift holes shall be grouted from the outside and inside of the manhole.

9. Side sewer services shall be PVC, ASTM D 3034 SDR 35 with flexible gasketed joints. Side sewer connections shall be made by a tap to an existing main or a tee from a new main connected above the springline of the pipe.

10. All sewer mains shall be field staked for grades and alignment prior to construction by a licensed engineer or surveying firm qualified to perform such work. Prior to constructing any sewer, the lot corners shall be staked and sewer line location established by survey, cost of which shall be borne by the Developer.

11. All plastic pipe and services shall be installed with continuous tracer tape installed 12" to 18" under the proposed finished subgrade. The marker shall be plastic non-biodegradable, metal core or backing marked sewer which can be detected by a standard metal detector.

12. Each side sewer lateral shall have a 2" x 4" wood "marker" at the termination of the stub. The "marker" shall extend from the trench to above finished grade. Above the ground surface, it shall be painted "green" with SEWER and the depth, in feet, stenciled in white letters 2" high.

13. Side sewers shall be installed by the Developer and coordinated for clearance with power, telephone, and other utilities.

14. All side sewers to be installed 10 feet into lot served and staked and marked as shown on these plans.

15. Pipe bedding shall be in accordance with WSDOT Standard Plan B-18c Class F. Pea gravel is an acceptable bedding material. All pipe shall be laid on a properly prepared foundation according to Standard Specification 7-02.3(1). This shall include necessary leveling of the trench bottom or the top of the foundation materials as well as placement and compaction of required bedding material to uniform grade so that the entire length of the pipe will be supported an a uniformly dense unyielding base.

16. A 6-foot square X 4-inch thick concrete pad shall be installed around all SSMH'S and a 3-foot square X 4-inch thick concrete pad shall be installed around all cleanouts that are not in a pavement area.

17. All lines shall be cleaned and pressure tested prior to paving in conformance with the above referenced specifications. Testing of the sanitary sewer main shall include TV-ing of the main by the Contractor. Immediately prior to TV-ing, enough water shall be run down the line so it comes out the lower manhole. A copy of the video tape shall be submitted to the City of Marysville. Acceptance of the line will be made after the tape has been reviewed and approved by Public Works. A water test of all manholes in accordance with Marysville standard may also be required. Testing shall take place after all underground utilities are installed and compaction of the roadway subgrade is completed.

18. Prior to backfill all mains and appurtenances shall be inspected and approved by the City of Marysville Department of Public Works. Approval shall not relieve the Contractor for correction of any deficiencies and/or failures as determined by subsequent testing and inspections. It shall be the Contractor's responsibility to notify the City of Marysville for the required inspections.

1-208 GRADING, EROSION AND SEDIMENTATION CONTROL PLAN NOTES

The following notes shall also be shown on the plans.

GRADING, EROSION AND SEDIMENTATION CONTROL NOTES:

1. All limits of clearing and areas of vegetation preservation as prescribed on the plans shall be clearly flagged in the field and observed during construction.

2. All required sedimentation and erosion control facilities must be constructed and in operation prior to any land clearing and/or other construction to ensure that sediment laden water does not enter the natural drainage system. The contractor shall schedule an inspection of the erosion control facilities PRIOR to any land clearing and/or other construction. All erosion and sediment facilities shall be maintained in a satisfactory condition as determined by the City, until such time that clearing and/or construction is completed and final stabilization has occurred. The implementation, maintenance, replacement, and additions to the erosion and sedimentation control systems shall be the responsibility of the permittee.

3. The erosion and sedimentation control system facilities depicted on these plans are intended to be minimum requirements to meet anticipated site conditions. As construction progresses and unexpected or seasonal conditions dictate, facilities will be necessary to ensure complete siltation control on the site. During the course of construction, it shall be the obligation and responsibility of the permittee to address any new conditions that may be created by his activities and to provide additional facilities, over and above the minimum requirements, as may be needed to protect adjacent properties, sensitive areas, natural water courses, and/or storm drainage systems.

4. Approval of these plans is for grading, temporary drainage, erosion and sedimentation control only. It does not constitute an approval of permanent storm drainage design, size or location of pipes, restrictors, channels, or retention facilities.

5. Any disturbed area which has been stripped of vegetation and where no further work is anticipated for the time period set forth by the SWPPP, must be immediately stabilized with mulching, grass planting, or other approved erosion control treatment applicable to the time of year in question. During the dry season (May 1 – September 30) soils may be exposed and unworked for 7 days. During the wet season (October 1 – April 30) soils may be exposed and unworked for 2 days. Grass seeding alone will be acceptable only during the dry season.

Seeding may proceed outside the specified time period whenever it is in the interest of the permittee but must be augmented with mulching, netting, or other treatment approved by the City.

6. In case erosion or sedimentation occurs to adjacent properties, all construction work within the development that will further aggravate the situation must cease, and the owner/contractor will immediately commence restoration methods. Restoration activity will continue until such time as the affected property owner is satisfied.

7. Stockpiles are to be located in safe areas and adequately protected by temporary seeding and mulching. Hydroseeding is preferred. No temporary or permanent stockpiling of materials or equipment shall occur within critical areas or associated buffers, or the critical root zone for vegetation proposed for retention.

8. Non compliance with the requirements for erosion controls, water quality, and clearing limits may result in revocation of project permit, plan approval, and bond foreclosures.

9. All earth work shall be performed in accordance with City Standards. Preconstruction soils investigation may be required to evaluate soils stability.

10. 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.

11. 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.

12. Upon completion of work, final reports must be submitted to the City in conformance with the current City adopted International Building Code.

1-209 INFILTRATION FACILITY (OR SYSTEM) NOTES

The following notes shall also be shown on the plans if infiltration facilities are approved for construction.

INFILTRATION FACILITY NOTES

1. Infiltration facility installations shall be directed/overseen by a licensed geotechnical engineer if directed by the City Engineer or designee. The geotechnical engineer shall certify that the underlying soil type and condition (native or fill soil) meets the deign specification prior to backfilling.

2. The geotechnical engineer will prescribe corrective action for soil that does not meet the design specification, soil that has been over compacted or for soil that has been contaminated by turbidity. Final engineering approval is required from the City.

3. Performance testing and verification for a facility shall be conducted before final construction approval by the City, or prior to construction of other project improvements or recording of a subdivision as required by MMC 14.15.120. The contractor shall be responsible for making corrections to ensure the stormwater system functions as designed.

1-300 HYDROSEEDING NOTES

The following notes shall also be shown on the plans if hydroseeding planned.

HYDROSEEDING GENERAL NOTES

1. Construction Acceptance: Will be subject to a well-established ground cover that fulfills the requirements of the approved construction plans and City of Marysville Standards.

2. All disturbed areas such as retention facilities, roadway backslopes, etc., shall be seeded with a perennial ground cover grass to minimize erosion. Grass seeding will be done using an approved hydroseeder or as otherwise approved by the City of Marysville.

3. Preparation of Surface: All areas to be seeded shall be prepared in a manner consistent with BMP T5.13 Post Construction Soil Quality and Depth in Chapter 5 of Volume V of the stormwater manual.

4. Immediately following finish grading permanent vegetation shall be applied consistent with the design and maintenance standards for Temporary and Permanent Seeding in the City adopted Department of Ecology Stormwater Management Manual for Western Washington.

5. All hydroseeding firms shall have a printout of the application rate for each job readily available for inspection by the Construction Inspection Division of Community Development.

6. The City of Marysville Construction Inspection Division of Community Development shall be notified of potential hydroseeding prior to the commencement of same to ensure compliance of these specifications.

1-301 TEMPORARY GRAVEL CONSTRUCTION ENTRANCE NOTES

The following notes shall also be shown on the plans.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

1. The temporary construction entrance should 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 manufactures specifications.

2. Gravel shall be crushed ballast rock, 12" in depth and installed to the specified dimensions at the entrance.

3. The gravel ballast rock shall be 4" to 8" in diameter and placed across the full width of the vehicular ingress and egress area. The length of entrance shall be a minimum of 100 feet.

4. If conditions on the site are such that most of the mud is not removed from vehicle tires by contact with the gravel, then the tires must be washed before vehicles enter onto a public road. Wash water must be carried away from entrance to a settling area to remove sediment. A wash rack may also be used to make washing more convenient and effective.

5. The entrance shall be maintained in a condition which will prevent tracking or flow of mud onto public rights-of-way. 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.

1-302 DEFINITIONS

AASHTO	American Association of State Highway and Transportation Officials.
Access Point	The point of connection of a road network element, excluding a public road, to the road network.
ACP	Asphalt concrete pavement.
ADA	Americans with Disabilities Act of 1991.
ADT	Average daily traffic. The total two-directional volume of traffic during a given time period (in whole days), greater than one day and less than one year, divided by the number of days in that time period.
Alley	A thoroughfare or right-of-way, usually narrower than a street, which provides access to the rear boundary of two or more residential or commercial properties and is not intended for general traffic circulation. Alleys are only permitted for properties fronting a public road.
Applicant	The property owner or a public agency who has applied for or is requesting a permit, license or approval from City of Marysville.
Appurtenance	Equipment and/or accessories that are part of an operating system or subsystem.
APWA	American Public Works Association.
As-Built Drawings	See Record Drawings
ASTM	American Society for Testing and Materials.
ATB	Asphalt-Treated Base.
Arterial	A transportation facility designated as an arterial in a UGA plan or the comprehensive plan.

Auxiliary Lane	The roadway portion adjoining the traveled way for truck climbing, speed change or for other purposes supplementary to through traffic movement.
Backfill	Replacement of excavated material with suitable material compacted as specified.
Best Management Practices (drainage)	The schedules of activities, prohibitions of practices, maintenance procedures, and structural and/or managerial practices, that when used singly or in combination, prevent or reduce the release of pollutants and other adverse impacts to waters of Washington State.
Best Management Practices (critical areas)	Physical, structural or managerial practices which have gained general acceptance by professionals in the appropriate field to minimize and mitigate adverse impacts to the functions and values of critical areas.
Bicycle or Bike	A vehicle propelled solely by human power upon which a person may ride, having two tandem wheels, except scooters and similar devices. "Bicycle" in this document may also be a three or four-wheeled, human-powered vehicle, but not a tricycle for children. A bicycle is considered a "vehicle" under Washington State Law.
Bicycle Facilities	Improvements and provisions to accommodate bicycling.
Bicycle Lanes	That portion of a roadway, which has been designated by striping, signing, and/or pavement marking for use of bicycles.
Biofiltration	Process of reducing pollutant concentrations in water by filtering through biological materials.
Bioretention	Engineered facilities that treat stormwater by passing it through a specified soil profile and either retain or detain the treated stormwater for flow attenuation.
Bollard	A post, that may or may not be removable, used to prevent vehicular access.
Boring	Grade and alignment-controlled mechanical method of installing a pipe or casing under a road or stream without disturbing the surrounding medium.
Breakaway Structure	A Structure that has been crash tested in accordance with National Cooperative Highway Research Program procedures – NCHRP 230.

Buffer	The zone contiguous with a sensitive area that is required for the continued maintenance, function, and structural stability of the sensitive area. The critical functions of a riparian buffer (those associated with an aquatic system) include shading, input of organic debris and coarse sediments, uptake of nutrients, stabilization of banks, interception of fine sediments, overflow during high water events, protection from disturbance by humans and domestic animals, maintenance of wildlife habitat, and room for variation of aquatic system boundaries over time due to hydrologic or climatic effects. The critical functions of terrestrial buffers include protection of slope stability, attenuation of surface water flows from stormwater runoff and precipitation, and erosion control.
Bulb	A round area for vehicle turnaround typically located at the end of a cul-de-sac street.
Bus Zone	A designated space for loading and unloading transit passengers
Capacity	The maximum number of vehicles that have a reasonable expectation of passing over a given roadway, or section of roadway, in one direction during a given time period under prevailing roadway and traffic conditions.
Casing	A larger pipe enclosing a carrier for the purpose of providing structural or other protection to the carrier and/or to allow for carrier replacement without re-excavation, jacking or boring.
Catchbasin	A chamber or well, usually installed at the curb line of a road, for the transport of surface water to a sewer or subdrain, having at its base a sediment sump designed to retain grit and detritus below the point of overflow.
CBU	Cluster box unit. A multiple mailbox delivery unit approved by the US Postal Service.
Channelization	The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands or other suitable means to facilitate the safe and orderly movement of both vehicles and pedestrians.
City Council	The City of Marysville legislative authority.
City Engineer, The Engineer	The City Engineer for the City of Marysville with authority and duties as designated in RCW 36.75 and RCW 36.80, or his/her authorized designee. Also referred to as "the Engineer" herein.
Clear Zone	The total roadside border area, starting at the edge of traveled way, available for safe use by errant vehicles. This area may consist of a shoulder, a recoverable slope, a non-

	recoverable slope, and/or a clear run-out area. The desired width is dependent upon the traffic volumes, speeds, and the roadside geometry.
CMP	Corrugated metal pipe.
Commercial Use	A use providing goods, merchandise or services for compensation.
Compaction	The densification of a fill by mechanical means.
Conduit	Enclosed tubular runway for protecting wires or cables.
Construction Plans	Project drawings subject to City review and approval prior to construction that show the location, character and dimensions of the proposed work such as layouts, profiles, cross-sections, details, methods and general notes.
Control Zone	That roadside area defined by the "Control Zone Distance Table", found in Appendix 5 of the WSDOT Utilities Manual, within the road right-of-way in which placement of utility objects is controlled.
Controlled Density Fill	A mixture of Portland cement, fly ash, aggregates, water and admixtures proportioned to provide a non-segregating, self-consolidating, free-flowing and excavatable material that will result in a hardened, dense, non-settling fill.
Conveyance System	The drainage facilities, both natural and man-made, which collect, contain, and provide for the flow of surface and stormwater from the highest points on the land down to a receiving water. The natural elements of the conveyance system include swales and small drainage courses, streams, rivers, lakes, and wetlands. The human-made elements of the conveyance system include gutters, ditches, pipes, channels, and most retention/detention facilities.
Cover	Depth to top of pipe conduit, casing or gallery below the grade of a road or ditch.
Critical Area	At a minimum, areas which include wetlands, areas with a critical recharging effect on aquifers used for potable water, fish and wildlife habitat conservation areas, frequently flooded areas, geologically hazardous areas, including unstable slopes, and associated areas and ecosystems.
CSBC	Crushed Surfacing Base Course.

CSTC	Crushed Surfacing Top Course.
Cul-de-sac	A short street having one end open to traffic and the other temporarily or permanently terminated by a vehicle turn around.
Deceleration Lane	A speed change lane, including tapered areas, to enable a turning vehicle to slow to a safe turning speed after it has left the main stream of faster moving traffic.
Design Speed	The speed approved by the Public Works Director or designee for the design of the physical features of a road as established by Sections 3-201, 3-202 and 3-203 for residential and commercial access streets or equal to 5 miles per hour above the current, or expected posted speed limit for arterials. In certain situations the Public Works Director or designee may consider 5 miles per hour above the 85-percentile speed.
Design Storm	A prescribed hyetograph and total precipitation amount (for a specific duration recurrence frequency) used to estimate runoff for a hypothetical storm of interest or concern for the purposes of analyzing existing drainage, designing new drainage facilities or assessing other impacts of a proposed project on the flow of surface water. (A hyetograph is a graph of percentages of total precipitation for a series of time steps representing the total time during which the precipitation occurs.)
Detention	The release of stormwater runoff from the site at a slower rate than it is collected by the stormwater facility system, the difference being held in temporary storage.
Detention Facility	An above or below ground facility, such as a pond or tank, that temporarily stores stormwater runoff and subsequently releases it at a slower rate than it is collected by the drainage facility system. There is little or no infiltration of stored stormwater.
Developer	Any person, firm, partnership, association, joint venture or corporation or any other entity who undertakes to improve residential, commercial, or industrial property or to subdivide for the purpose of resale and profit.
Deviation	A modification of these Standards approved by the City Engineer.
DHV	Design hour volume. Hourly traffic volume used for road design and capacity analysis, usually one or more peak hours during a 24-hour period.

Director	The Director of the City of Marysville Department of Public Works or his/her authorized representative.
Dispersion	Release of surface and stormwater runoff such that the flow spreads over a wide area and is located so as not to allow flow to concentrate anywhere upstream of a drainage channel with erodible underlying granular soils.
Drainage	The collection, conveyance, containment or discharge of stormwater runoff.
Drainage Facility	Any part of a constructed infrastructure system used for collecting, conveying and storing stormwater runoff. Drainage facilities include, but are not limited to, all stormwater conveyance systems and containment facilities, including pipelines, channels, dikes, ditches, closed depressions, stormwater flow control facilities, stormwater treatment facilities, erosion and sedimentation control facilities, and other drainage structures and appurtenances. Same as "Stormwater Facility."
Drive Aisle	A road network element that is owned in common by all the property owners of a development and is not located in a tract or easement. A drive aisle that provides access to the rear of a structure, lot or use is an alley.
Driveway	A privately maintained access to residential, commercial, or industrial properties.
Driveway, Shared	See Shared Driveway.
Easement	A right granted by a property owner to specifically named parties or to the public for the use of certain land for specified purposes. Where appropriate to the context, "easement" may also refer to the land covered by the grant. This may include access, pedestrian paths, bicycle paths, utility easements, drainage, native growth protection areas, resource protection areas or open space.
EDDS	The Engineering Design and Development Standards of City of Marysville, adopted by the City of Marysville Department of Public Works pursuant to sections 12.02A.010, 14.03.010, and 14.15.015 of the MMC.
Edge of Traveled Way	The face of curb for roads that are, or will be, constructed to urban standards or the outside edge of pavement (not including paved shoulders) for roads that are, or will be, constructed to rural standards.

Effective Impervious Surface	Those impervious surfaces that are connected via sheet flow or discrete conveyance to a drainage system. Impervious surfaces are considered ineffective if: 1) the runoff is dispersed through at least one hundred feet of native vegetation in accordance with BMP T5.30 – "Full Dispersion" as described in Chapter 5 of Volume V of the Stormwater Manual ; 2) residential roof runoff is infiltrated in accordance with Downspout Full Infiltration Systems in BMP 5.10A Volume III; or 3) approved continuous runoff modeling methods indicate that the entire runoff file is infiltrated.
Encroachment	Occupancy of City right-of-way by non-roadway structures or other objects.
Emergency Vehicle Signal	A special adaptation of a conventional traffic signal specifically installed to allow for the safe movement of authorized emergency vehicles. When not providing for the movement of emergency vehicles the signal shall either flash continuously consistent with the requirements for a conventional traffic signal or display continuous green (allowed at non-intersection locations only). At no time shall the system simply be de-energized. LED displays are required.
Engineer	See City Engineer.
Eyebrow	A partial bulb located adjacent to the serving road that provides access to lots and serves as a vehicle turnaround.
Fire Apparatus Access Road	A road that provides fire apparatus access from a fire station to a facility, building or portion thereof. This is a general term inclusive of all other terms such as fire lane, public street, private street, parking lot lane and access roadway.
Franchise	A document granted by the City authorizing the use of road rights-of-way by public or private entities, subject to specified conditions, in accordance with RCW 36.55 and RCW 80.32.
GB	Gravel Borrow.
Geometrics	The physical arrangement of the visible elements of a road or drainage system such as alignment, grade, lines, angles, curvature, width, and side slopes used to measure and identify areas of land.
Grade	Rate or percent of change in slope either ascending or descending from or along the roadway. Measured along the centerline of the roadway or access point.
Half-Street	Street constructed along edge of development, utilizing a portion of the regular width of right-of-way and permitted as

	an interim facility pending construction of the other half of the street by the adjacent owner.
Hammerhead	An alternative turnaround at the terminus of a road running lateral to the road at the end. Serves no more than 4 dwelling units.
Hard Surface	An impervious surface, a permeable pavement or a vegetated roof.
Hazard	A side slope, an object, water, or a drainage device, which, if impacted, would apply unacceptable impact forces on the vehicle occupants, or place the occupants in a hazardous position. May be either natural or man-made.
HMA	Hot mix asphalt.
HOV Lane	A road or highway lane designated for the exclusive use of high occupancy vehicles and marked or signed accordingly.
Hyporheic Zone	The saturated zone under and adjacent to a river or stream, comprising substrate with the interstices filled with water.
Impervious Surface	A non-vegetated area that either prevents or retards the entry of water into the soil mantle as compared to infiltration under natural conditions prior to development. A non-vegetated area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow that was present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roofs, walkways, patios, driveways, parking lots, storage areas, concrete or asphalt paving, graveled areas and roads, packed earthen materials, surfaces covered by oil, macadam, asphalt-treated base material (ATB), bituminous surface treatment (BST), chip seal, seal coat or emulsified asphalt and cutback asphalt cement, and other surfaces which similarly impede the natural infiltration of stormwater. Open, uncovered retention and detention facilities shall not be considered impervious surfaces for purposes of determining whether the thresholds for applying minimum stormwater management requirements are exceeded. Open, uncovered retention and detention facilities shall be considered impervious surfaces for purposes of runoff modeling.
Infill Development	The development of a parcel of land in a highly developed urban area.
Infiltration	Means the downward movement of water from the surface to the subsoil.

Intersection Sight Distance	Distance required for a driver of a vehicle traveling at or near the posted speed on the major road to reduce speed to avoid overtaking a vehicle which has entered the intersection from the minor road whether by right- or left-turning movements or crossings.
Island	A defined area between traffic lanes for control of vehicle movements and/or for pedestrian refuge.
Joint-Use Driveway Tract	A jointly owned and maintained tract or easement serving two properties.
Land Disturbing Activity	Any activity that will result in movement of earth or a change in the existing soil cover or the existing soil topography (both vegetative and non-vegetative), including the creation and/or replacement of impervious surfaces. Land disturbing activities include, but are not limited to clearing, grading, filling and excavation. Compaction that is associated with stabilization of structures and road construction also is a land disturbing activity. Vegetation and drainage facility maintenance practices are not land disturbing activities. Stormwater facility maintenance is not considered land disturbing activity if conducted according to the established standards and procedures.
Landing	Road or driveway approach area to any public or private road. Also, the level area at the back of the sidewalk ramp, typically 4 feet wide.
LID or Low Impact Development	A stormwater management and land development strategy that strives to mimic pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation and transpiration by emphasizing conservation and use of on-site natural features, site planning and distributed stormwater management practices that are integrated into a project design.
Loop	Road of limited length forming a loop, having no other intersecting road, and functioning mainly as direct access to abutting properties. A loop may be designated for one-way or two-way traffic.
Maintenance	Activities conducted on currently serviceable structures, facilities, and equipment that involve no expansion or use beyond that previously existing and result in no significant adverse hydrologic impact. It includes those usual activities taken to prevent a decline, lapse or cessation in the use of structures and systems. Those usual activities may include replacement of dysfunctional facilities, including cases where any permit requires replacing an existing structure with a different type structure, as long as the functioning characteristics of the original structure are not changed. Maintenance does not include an expansion in physical dimension, capacity or use.

Manhole	Opening in an underground utility system into which workers or others may enter for the purpose of making installations, inspections, repairs, connections, cleaning, and testing.
Median	That portion of a divided roadway separating the traveled ways for traffic in opposite directions.
MMC	City of Marysville Municipal Code.
MPH	Miles per hour.
MUTCD	The Manual on Uniform Traffic Control Devices, published by the U.S. Department of Transportation.
New Development	Land disturbing activities, including Class IV general forest practices; structural development, including construction or installation of a building or other structure; creation of hard surfaces; and subdivisions, short subdivisions, residential condominiums, single-family detached units (SFDU), planned residential developments (PRD) and binding site plans. Projects meeting the definition of redevelopment shall not be considered new development.
Non-Motorized Transportation	Any mode of transportation that utilizes a power source other than a motor.
Off Street Parking Space	An area accessible to vehicles, exclusive of roadways, sidewalks, and other pedestrian facilities, that is improved, maintained and used for the purpose of parking a motor vehicle.
Operating Speed	The speed at which drivers are observed operating their vehicles during free-flow conditions. The 85th percentile of the distribution of observed speeds is the most frequently used measure of the operating speed associated with a particular location or geometric feature. Used to determine stopping sight distance and intersection sight distance for existing roadways.
Passing Sight Distance	The minimum sight distance required for the driver of one vehicle to pass another vehicle safely and comfortably.

Pavement	The combination of subbase, base course, and surfacing materials placed on a subgrade to support the traffic load and distribute it to the subgrade.
Pavement Width	Paved area on shoulder-type roads or paved surface between curb, thickened edge or gutter flow line on all other roads as depicted in the Standard Plans.
PC	Point of curvature. The point of change from a back tangent to a circular curve.
PCC	Portland cement concrete or point of compound curvature.
Pedestrian	Person traveling on foot, in a wheelchair or similar device.
Pedestrian Facility	Infrastructure and equipment that create a walking environment, including sidewalks, curb ramps, traffic control devices, trails, walkways, crosswalks, paved shoulders, shared use paths and other design features intended to provide for pedestrian travel.
Permanent Road End	The physical termination of a roadway without potential for extension, based on the best available evidence at the time of evaluation. Typically a cul-de-sac.
Permeable Pavement	Pervious concrete, porous asphalt, permeable pavers or other forms of pervious or porous paving material intended to allow passage of water through the pavement section. It often includes an aggregate base that provides structural support and acts as a stormwater reservoir.
Permit	A document or franchise authorized by the City.
Pervious Surface	Any surface material that allows stormwater to infiltrate into the ground. Examples include lawn, landscape, pasture, native vegetation areas and permeable pavements.
PI	Point of intersection. The point of intersection of a back tangent and a forward tangent.
Pipe	Structural tubular product designed, tested, and produced for the conveyance of specific liquids or gases under specific conditions.
Pipe Stem	A strip of land having a width narrower than that of the lot or parcel to be served and is designed for providing access to that lot or parcel.
Planter strip or planting strip	A planter strip is that portion of right-of-way between the curb line and the sidewalk, or between the sidewalk and the right-of-way line, used for the planting of trees, shrubs, groundcover or grass.

Plowing	Direct burial of utility lines by means of a plow type mechanism that breaks the ground, places the utility line at a predetermined depth, and closes the break.
PGIS	Pollution-Generating Impervious Surface. Those impervious surfaces considered to be a significant source of pollutants in stormwater runoff. Such surfaces include those which are regularly subject to vehicular use, industrial activities (as further defined in the glossary of the Stormwater Manual), or storage of erodible or leachable materials, wastes, or chemicals, and which receive direct rainfall or the run-on or blow-in of rainfall; metal roofs unless they are coated with an inert, non-leachable material such as baked-on enamel coating; or roofs that are subject to venting significant amounts of dusts, mists or fumes from manufacturing, commercial or other indoor activities.
Posted Speed	Maximum vehicle speed signed along a roadway.
PRD	Planned Residential Development.
Private Road	A privately owned and maintained access provided for by a tract, easement, or other legal means, serving up to a maximum of 4 lots and a maximum of 8 dwelling units. Private roads are only permitted in Short Subdivisions with 4 or less total development lots.
Professional Engineer	A professional civil engineer licensed to practice in the State of Washington.
Project Site	That portion of a property, properties or right-of-way subject to land disturbing activities, new hard surfaces or replaced hard surfaces.
PT	Point of tangency. The point of change from a circular curve to a forward tangent.
Public Street	Publicly owned facility-providing access, including the roadway and all other improvements, inside the right-of-way.
Radius Return Access Point	Intersection of an access point with a county road delineated by either pavement edges or curbs laid out at each edge in a curvilinear fashion between tangents formed by the edge of roadway (or curb face) and the edge of access point (driveway pavement or curb face).
Rain Garden	A non-engineered shallow landscaped depression, with compost-amended native soils and adapted plants. The depression is designed to pond and temporarily store stormwater runoff from adjacent areas, and to allow stormwater to pass through the amended soil profile.

Record Drawings	An approved final revision of a design drawing or plan updated to include information from field inspectors showing the true condition or configuration of what has been built. The drawing or plan is designated "Record Drawing" by stamp or lettering on the drawing and the primary function is to document what was designed and what was actually built, including dimensions, elevations, location and calculations. Formerly known as "as-built" or "as-constructed" drawings.
Redevelopment	The following activities that take place on a site that already has 35 percent or more existing hard surface coverage: the creation of new hard surface(s); structural development including construction, installation, expansion or replacement of a building footprint or other structure; replacement of existing hard surface that is not maintenance; and land disturbing activity.
Relocation	Planned change of location of an existing facility to a more advantageous place. Character or general physical nature of the facility will not change.
Replaced Hard Surface	For structures, the removal and replacement of hard surfaces down to the foundation. For other hard surfaces, the removal down to bare soil or base course and replacement.
Replacement	Installation of a like element of a utility system or subsystem in the same, or nearly the same, physical location normally due to damage, wear or obsolescence of the element.
Restoration	All work necessary to replace, repair or otherwise restore the right-of-way and all features contained within the right-of-way to the same or equivalent condition as before.
Retention	The detainment of stormwater runoff in a basin without release except by means of evaporation or infiltration.
Retention Facility	An open or closed drainage facility, such as a pond or tank, that stores stormwater runoff without release except by means of evaporation, plant transpiration or infiltration into the ground. The facility includes the flow control structure, the infiltration system, the inlet and outlet pipes, and all maintenance access points.
Right-of-Way (ROW)	All property in which the City has any form of ownership or title and which is held for public road purposes, regardless of whether or not any road exists thereon or whether or not it is used, improved, or maintained for public travel.

Road, Private	See Private Road.
Road, Public	See Public Road.
Road End	The physical termination of the traveled way.
Road Network	The connected road system that provides access to or within property or development. Pedestrian facilities are part of a road network when located within a right-of-way, tract or easement or when located outside a right-of-way, tract or easement but open to the public.
Road Network Element	An individual component of the connected road network that provides access to or within property or development. Elements include public roads, private roads, drive aisles, alleys, shared courts, shared driveways, driveways and any associated rights-of-way, tracts or easements.
Road and Street	Road and Street will be considered interchangeable terms for the purpose of these Standards.
Roadway	Pavement width plus any non-paved shoulders.
Rural Area	Those areas of the county outside an urban growth area as depicted in the City of Marysville comprehensive plan.
Separate Turn Lane	An auxiliary lane for traffic in one direction, which has been physically, separated from the through traffic lane(s) by a traffic island or stripe. Frequently provided in one or more approaches to an intersection.
Shared Driveway	A road network element that provides a single vehicle and pedestrian access in a private tract or easement for two lots that have no more than two dwelling units or two Group U occupancies per lot.
Shared Roadway	A roadway, without a painted bicycle lane, that does not prohibit bicycles.
Shared Use Path	A multi-use facility physically separated from the roadway, for bicyclists, pedestrians or other non-motorized users.
Shoulder	The paved or unpaved portion of the roadway outside the traveled way that is available for emergency parking or non-motorized use.
Sidewalk	A facility constructed between the curb line, in the lateral line of a roadway, and adjacent property set aside and intended for pedestrian use, or such portion of private property that parallels, and is in proximity to, a public roadway and

	dedicated for use by pedestrians. Sidewalks are typically constructed of concrete but may be asphalt or permeable pavement where feasible for stormwater infiltration.
Signed Shared Roadway	A roadway, designated by signing as a preferred route for bicycle use, with appropriate improvements such as widened shoulders.
Site	The area defined by the legal boundaries of a parcel or parcels of land that is (are) subject to new development or redevelopment, including contiguous improvements in the right-of-way. For road projects, the length of the project site and right-of-way boundaries define the site.
Speed Change Lane	Separate lane to allow a vehicle entering or leaving a roadway to increase speed (acceleration lane), or decrease speed (deceleration lane) to a rate at which it can safely merge with, or diverge from, through traffic.
Standard Plan	WSDOT Standard Plans for Road, Bridge, and Municipal Construction or Standard Plans included in this document as referenced.
Stopping Sight Distance	Distance needed for a vehicle traveling at or near design speed to stop, prior to reaching a stationary object in its path.
Stormwater Facility	A constructed component of a stormwater drainage system, designed or constructed to perform a particular function, or multiple functions. Stormwater facilities include, but are not limited to, pipes, swales, ditches, culverts, street gutters, detention ponds, retention ponds, constructed wetlands, infiltration devices, catch basins, oil/water separators, and biofiltration swales.
Stream	Those areas where naturally occurring surface waters flow sufficiently to produce a defined channel or bed which demonstrates clear evidence of the passage of water including, but not limited to bedrock channels, gravel beds, sand and silt beds and defined channel swales. A defined channel or bed means a water course that is scoured by water or contains deposits of mineral alluvium. The channel or bed need not contain water during the entire year. Streams do not include water courses which were created entirely by artificial means, such as irrigation ditches, canals, roadside ditches, or storm or surface water runoff features, unless the artificially created water course contains salmonids or conveys a stream that was naturally occurring prior to the construction of the artificially created water course.

Street	Used interchangeably with "road," especially in urban areas. See "Public Road" definition.
Swale	A shallow drainage conveyance with relatively gentle side slopes, generally with flow depths less than one foot.
Temporary Road End	The physical termination of a roadway with potential for further extension typically ending in a temporary cul-de-sac or hammerhead turnaround.
Traffic	Movement of motorized and non-motorized vehicles, persons, cargo, and equestrians through the transportation network comprised of streets, roads, sidewalks, walkways and shared use paths.
Traffic Control	Those activities necessary to safeguard the general public, as well as all workers, during the construction and maintenance of roadway and other facilities within the right-of-way.
Traffic Engineer	City of Marysville Traffic Engineer.
Trail	Public way constructed primarily for, and open to, pedestrians, bicyclists and equestrians.
Traveled Way	That portion of the roadway intended for the movement of vehicles, including bicycles in bicycle lanes, but exclusive of shoulders.
Trip	A one-direction movement, which begins at an origin and ends at a destination.
Trip Distribution	The calculation and assignment of trips from a land development proposal to the surrounding road network.
Trip End	Each trip has two ends, the origin and the destination. Trip ends for a location are the summation of origins and destinations.
Trip Generation	The number of trips created by a particular land use or activity.
Ultimate Buildout	The development potential based on established GMA land use designations, taking into account existing developments and assumptions about environmental constraints and other limiting features.
Unmaintained Road	A road within City right-of-way that is accessible to public travel but is not maintained by the City.
Unopened Right-of-Way	A City right-of-way that exists by dedication or deed, but for which no vehicular roadway meeting these Standards has been constructed by the City or other parties.

Utility	A company providing public service such as natural gas, petroleum, electric power, telephone, telegraph, water, sewer, or cable television, whether or not such company is privately owned or owned by a governmental entity.
Walkway	A facility designated for pedestrian and non-vehicular traffic that is built on existing ground without being raised. Walkways are typically constructed of asphalt but may be permeable pavement where feasible for stormwater infiltration. Separation from vehicle traffic may be provided by pavement striping, extruded curb, ditch or open space.
Wetlands	Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include, but are not limited to swamps, marshes, bogs and similar areas, as well as artificial wetlands intentionally created from non-wetland areas to mitigate for conversion of wetlands, as permitted by the County. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to irrigation and drainage ditches, grass-lined biofiltration swales, canals, detention facilities, wastewater treatment facilities, farm ponds and landscaping amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas to mitigate the conversion of wetlands.
Window Cut	A rectangular cut in asphalt or concrete pavement (typically ranging in size from 4 square feet to 25 square feet) undertaken by a utility for repair of underground facilities or to install an underground service connection.
WSDOT	Washington State Department of Transportation.

APPENDIX A

CONSTRUCTION PLAN COMPLETENESS CHECKLIST

Project Name:_____ **PA Number** _____

Construction Plan Examiner:_____

Date:_____

Review #: 1 2 3 4 5

NOTE: All materials submitted for review must use and comply with City of Marysville Engineering Design and Development Standards (EDDS), Marysville Municipal Code (MMC), the most recent adopted version of the Department of Ecology's Stormwater Management Manual for Western Washington (SWMM), and the Low Impact Development Technical Guidance Manual for Puget Sound (LID). Any deviations shall include a deviation request form. MMC and City of Marysville EDDS can be found on line at http:www.marysvillewa.gov

FILE INVENTORY AND PLAN SUBMITTAL

Plans shall comply with the following reports and materials that are applicable:

- ☐ Preliminary Plat Map
- ☐ Hearing Examiner's Report & Related Correspondence (check for latest report)
- ☐ Preliminary Plat Approval Ordinance
- ☐ SEPA Checklist

Submittal shall contain: (check satisfied conditions, circle missing elements)

- ☐ A complete set of surveyed construction plans prepared by a licensed surveyor and stamped by a Professional Engineer. Plans need to include applicable information such as a Cover Sheet, Grading Plan, SWPPP, Drainage Plan, Signage and Striping Plan, Sanitary Sewer and Water Plans, Roads and Transportation Plans, and Construction Notes and Details.
- ☐ A Drainage Report
- ☐ A Geotechnical/Hydrogeotechnical Investigation Report
- ☐ A Sensitive Areas or Wetland Investigation Report

Note: Fees for review of construction plans will be charged per MMC 15.12.

GENERAL REQUIREMENTS FOR PLAN SETS

- ☐ Sheet size shall be 24" x 36" unless otherwise requested.
- ☐ Construction plan view shall be drawn to common engineering scale (maximum1"=50')
- ☐ The ratio of the vertical to the horizontal scale shall be 1V:10H.
- ☐ All details and cross sections must have titles and identify scale. Details must reference a source.
- ☐ For each standard detail in the engineered construction drawings plan set, include the corresponding City of Marysville Standard Detail number from the EDDS or other source. When possible, correlate the standard detail number to the plan view sheets.

- ☐ All details, cross sections, and profiles must be labeled and referenced out on their corresponding plans.
- ☐ Roads and general lot layout must conform to the approved preliminary plat map.
- ☐ Construction Plans must comply with Hearing Examiners Decision or Notice of Preliminary Approval.
- ☐ Notes and specifications are to be provided directly from EDDS, WSDOT Standard Specifications, manufacturer specifications, LID specifications, and materials specifications, and are to be provided in their entirety. At a minimum, plan sets are to contain the following applicable notes from the EDDS:

- ☐ General Notes
- ☐ Roadway Plan Notes
- ☐ Stormwater Plan Notes
- ☐ Sanitary Sewer Plan Notes
- ☐ Water System Plan Notes
- ☐ Site Grading & Erosion and Semimentation Control Plan Notes
- ☐ Infiltration Facility (or System) Notes
- ☐ Hydroseeding General Notes
- ☐ Temporary Gravel Construction Entrance Notes
- ☐ Construction sequence and schedule

GENERAL REQUIREMENTS FOR ALL PLAN SHEETS

All sheets in the construction plans shall include the following information:

- ☐ a project title.
- ☐ a page title (For example: Site Plan, Drainage Plan…).
- ☐ a Title Block to contain Engineering Firm, Project name, Name of sheet, Sheet __ of __, located on right margin.
- ☐ a City of Marysville Project Number.
- ☐ a Professional Engineer's seal, signature, date of signature, and expiration date.
- ☐ ¼ Section, Section, Township and Range centered at top border on all sheets.
- ☐ an Acknowledgement Block for Engineering Services Manager with note "Approval for 18 months from date of signature", located in lower right corner.
- ☐ an approval Block for Fire Marshal on Water Plans or other applicable plans.
- ☐ an approval Block for Post Master on applicable plans.
- ☐ a note on all sheets that "The Contractor shall verify the location of all existing utilities prior to any construction. Agencies involved shall be notified within a reasonable time prior to the start of construction." Provide a prominent note "Call 1-800-424-5555 Before You Dig".
- ☐ a north arrow.
- ☐ an engineering scale on site plans shall not be more than 1" = 20' nor less than 1" = 50'.
- ☐ a complete legend for line types, hatches, and symbols on plans and profiles.

GENERAL REQUIREMENTS FOR ALL SITE AND TOPOGRAPHIC INFORMATION

- ☐ Show onsite benchmark locations and provide descriptions.
- ☐ All property lines are to be shown with bearings, distances, and ties to controlling corners or subdivision corners.
- ☐ Show location, size and type of any existing or proposed structures, impervious areas, drainage facilities, wells, drain fields, drain field reserve areas, roads, pavement, striping, signs, easements, setbacks, and utilities on the site. Clearly differentiate between proposed and existing elements.
- ☐ Property lines are to be shown with bearings, distances, and ties to controlling corners or subdivision corners. Show existing and proposed drainage pattern(s), storm drainage and LID facilities (e. g. ditch lines, culverts,

catch basins, french drains, surface drainage or sheet flow arrows). Clearly differentiate between proposed and existing.

- ☐ Show location of all property boundaries, easements, lakes, streams, creeks and structures on site and within 50 feet of site boundaries.
- ☐ Show location of all wetlands, sensitive areas, primary association areas for threatened and endangered species, and erosion hazardous areas and landslide areas on site and those within 100 feet of the site boundaries.
- ☐ Show location of all setbacks and buffers from critical areas, property lines, structures, and utilities.
- ☐ Show location of all existing and proposed native growth protection areas (NGPA's) or native growth easements (NGPAE) on the site.
- ☐ Show boundaries or limits of site disturbance, clearing, and grading.
- ☐ Show location of any off-site critical areas, and boundaries of areas which are affected by the construction.
- ☐ Map existing wells, drain fields, infiltration systems, rain gardens and drain field reserve areas located within the distances of concern.
- ☐ Show location and type of all existing and proposed water quality and source control BMPs.
- ☐ Show location and type of existing and proposed water quality control facilities or measures such as detention ponds, rain gardens, roof gardens or other BMP's. Provide high water elevations for design of infiltration systems, if any.
- ☐ Grading setback details are to include 1/2 height of fill, 1/5 height of cut, 2' minimum.

COVER SHEET

- ☐ Provide a preliminary plat map that complies with requirements from Hearing Examiner.
- ☐ Provide a Vicinity Map with north arrow and scale.
- ☐ Provide name, address and phone number of applicant or developer, engineer, architect, contractors, etc.
- ☐ Provide a legal description of site along with property tax account number(s) of subject property and adjacent properties.
- ☐ Provide a Sheet Index.
- ☐ Provide a horizontal and vertical datum or basis for elevation and the benchmark used for elevation control (NAD 83 and NAVD 88 datum only).

GRADING PLAN

- ☐ Provide cut volumes and fill volumes in cubic yards.
- ☐ Depict locations considered for cut and fill calculations.
- ☐ Provide finished floor elevations if applicable.
- ☐ Provide lot areas if applicable.

CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

Note: The SWPPP will comply with all criteria outlined in Vol. 1, Ch. 3 of the SWMM. For LID developments, the SWPPP will also comply with the LID Manual.

- ☐ Address all 13 Elements of the SWPPP.

- ☐ Show location and type of proposed measures (BMPs) for Temporary Erosion and Sedimentation Control (TESC) or SWPPP as contained in Vol. 2 of the DOE Stormwater Management Manual for Western Washington.
- ☐ Provide details and notes for erosion control.
- ☐ Show locations of temporary stockpiles.
- ☐ Show all construction BMP's and reference or provide standard details.
- ☐ Show construction site access.
- ☐ Show flow arrows or paths for stormwater control during construction.
- ☐ Protect drain inlets.
- ☐ Stabilize soils, slopes, channels and outlets.
- ☐ Control sources of pollution.
- ☐ Control dewatering (sites requiring dewatering will need to develop a dewatering plan).

DRAINAGE PLAN

Note: The Drainage Plan and stormwater design will comply with Chapter 4 of the EDDS, Chapter 14 of the MMC, the SWMM, and the LID Manual.

- ☐ Provide spot elevations/flow arrows/contours for stormwater flow at post-development construction.
- ☐ Convey or control water from proposed and existing roads and/or adjacent properties.
- ☐ Show locations of emergency overflows and bypasses.
- ☐ Show roof drains and yard drains.
- ☐ Provide a 20' minimum drainage easement for open channel storm drainage facilities and closed storm drainage facilities.
- ☐ Provide a 15' minimum building setback line from the top of bank of a defined channel.
- ☐ Provide a 10' minimum building setback for closed drainage systems.
- ☐ 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 along one lot.
- ☐ Access is to be provided for inspection and maintenance purposes for drainage structures that are to be located within an easement.
- ☐ No storm sewer pipe within a drainage easement shall have its centerline closer than 5' to a rear or side property line.
- ☐ Minimum storm sewer pipe diameter in right of way and between catch basins and/or manholes shall be 12".
- ☐ 24" pipe cover is preferred for storm drain systems. Alternative pipe material and City approval will be required for pipes with less than 24" of cover.
- ☐ Show all sizes, pipe materials and structures.
- ☐ Show direction of pipe flow.
- ☐ Show pipe's invert, slope, length, type, and catch basin grate elevation on plan view.
- ☐ Show existing and proposed storm drainage system profile(s) with pipe size, slope, catch basin type, location, station, rim and invert elevations.
- ☐ Provide energy dissipater at outfalls

STORMWATER SITE PLAN (DRAINAGE REPORT)

Note: The Stormwater Site Plan shall comply with Volume 1of the SWMM.

☐ The Stormwater Site Plan will be submitted in the following format:

- ☐ Section1 Introduction – Provide a project description, pertinent details, and proposed land uses.
- ☐ Section 2 Existing Site Conditions – Address subject matter outlined in Volume 1, Chapter 3.1.1 in the SWMM. Provide a figure that illustrates the subject matter.
- ☐ Section 3 Developed Site Conditions – Address subject matter outlined in Volume 1, Chapter 3.1.2 in the SWMM. Provide a figure that illustrates the subject matter.
- ☐ Section 4 Off Site Analysis – Address subject matter outlined in Volume 1, Chapter 3.1.3 in the SWMM. Provide a figure that illustrates the subject matter.
- ☐ Section 5 Minimum Requirements – Address all applicable Minimum Requirements in Volume 1, Chapter 2 of the SWMM. Show how you arrived at the requirements by including Figure 2.4.1 and 2.4.2.
- ☐ Section 6 Stormwater Control Plan – Address subject matter outlined in Volume 1, Chapter 3.1.5 in the SWMM. Discuss the following information:
  - Existing Site Hydrology
  - Developed Site Hydrology
  - Treatment and Flow Control Needed
  - Performance Standards and Goals per Volume V, Chapter 3 of the SWMM for Treatment Facility Menus
  - Flow Control System
  - Water Quality System
  - Conveyance System Analysis.
- ☐ Section 7 SWPPP – Address all 13 Elements outlined in Volume 1, Chapter 3.1.6 and Volume 1, Chapter 2 of the SWMM.
- ☐ Section 8 Project Overview – Address subject matter outlined in Volume 1, Chapter 3.1.7 in the SWMM.

☐ Hydrologic Analysis and Flow Control Design shall be analyzed using the most recent version of the Western Washington Hydrology Model.

☐ Include all computer generated reports, sources, references, tables, graphs, aerials, maps, and calculations used for all design and analysis in appendices.

ROADS AND TRANSPORTATION PLAN

Note: Road and transportation design shall comply with Chapter 3 of the EDDS and Chapters 11 and 12 of the MMC.

☐ Travel and parking lane(s) must be labeled on the roadway sections.
☐ Provide typical roadway sections and identify street names and classifications.
☐ Provide road alignment with 100 foot stationing and stationing at PCs and PTs with bearing and distances on centerlines
☐ Provide right of way lines and widths for existing and proposed road and intersecting roads
☐ Provide channelization plan and match or tie into existing channelization.
☐ Provide a signalization plan.
☐ Provide street Illumination per EDDS 3-506. PUD submittal may be required.
☐ Provide curve data with radius, delta, arc length, and tangent distance for all curves. These may be shown in a curve table.

- ☐ Show details for frontage improvements and overlays.
- ☐ Show limits of existing and proposed paving including grinds and overlays.
- ☐ Side slopes shall not be steeper than 4:1 and are to be designed per EDDS 3-502.
- ☐ All new residential access streets shall have traffic calming devices per EDDS 3-525.
- ☐ Provide mailbox location and detail with Post Master approval per EDDS 3-505.
- ☐ Rock facings over 4' in height are to be designed by a Geotechnical Engineer and are subject to approval by the Public Works Director or Designee.
- ☐ Road grades are to comply with EDDS 3-201, 3-202, and 3-203.
- ☐ Minimum road grade is to be 0.5%.
- ☐ Grades are to be shown to 3 decimal places and as a percent.
- ☐ Vertical curves are to show elevations and stations of vertical PI (s) , P.C. (s) , PT (s), sag (low point) and crest (high point).
- ☐ Super elevation criteria/data is required to be shown for all roads greater than 25 MPH design speed.
- ☐ Include sight distance triangles at each roadway intersection. Sections 3-211 and 3-212 of the EDDS provide design standards for the sight distance triangles.

SANITARY SEWER PLAN

Note: Sanitary sewer design shall comply with Chapter 5 of the EDDS and Chapter 14 of the MMC.

- ☐ Show location of streets, right-of-ways, easements, existing utilities, and sewers.
- ☐ Show ground surface, pipe type, class and size, manhole stationing, invert and surface elevation at each manhole, and grade of sewer between adjacent manholes. All manholes shall be numbered on the plans and correspondingly numbered on the profile. Where there is any question of the sewer being sufficiently deep to serve any residence, the elevation and location of the basement floor, if basements are served, shall be plotted on the profile of the sewer which is to serve the house in question. The Developer shall state that all sewers are sufficiently deep to serve adjacent basements, except where otherwise noted on the plans.
- ☐ Show all known existing structures, both above and below ground, which might interfere with the proposed construction, particularly water mains, gas mains, storm drain, overhead and underground power lines, telephone lines, and television cables.
- ☐ Show all utility easements and include County recording numbers.
- ☐ Show details in scale drawings which clearly show special sewer joints and cross sections, and sewer appurtenances such as manholes and related items and all other items as required by the City to clearly identify construction items, materials, and/or methods.
- ☐ Sanitary sewers shall be placed with minimum 5' cover from finished grade, ditch bottom or natural grade.
- ☐ Sewer mains to be installed shall be of material noted below:
  - Less than 5' cover over top of pipe: D.I.P. Class 52: City engineer approval required.
  - 5' - 18' cover over top of pipe: PVC, ASTM D 3034, SDR 35 or ASTM F 789.
  - Deeper than 18': D.I.P. Class 52, or C-900.

WATER PLAN

Note: Water distribution design and construction shall conform with Chapter 2 of the EDDS and Chapter 14 of the MMC.

☐ Water mains shall be placed with minimum 42” cover from finished grade, ditch bottom or natural grade.
☐ Pressure reducing stations and pressure reducing valves shall be designed in accordance with EDDS 2-080 and take into consideration the pressure zones outlined in the City of Marysville Comprehensive Plan.
☐ Show and/or reference all details for connections, trenching, and installation.
☐ Show location and address all design elements for fire hydrants per EDD 2-060 and Fire Marshall requirements.
☐ Pipes being laid on curves shall be designed per EDDS 2-230.