



## PUBLIC WORKS DEPARTMENT

### ENGINEERING REVIEW CHECKLIST

Project Name: \_\_\_\_\_

Date: \_\_\_\_\_

Project No.: \_\_\_\_\_

By: \_\_\_\_\_

**Circled** items need to be addressed. **Checked** items are complete or noted Not Applicable.

#### General Plan Formatting

1.  Checklist, filled out, included with plans submittal.
2.  Sedro-Woolley spelled correctly with a hyphen.
3.  Plan sheets and profile sheets or combined plan and profile sheets, specifications and detail sheets as required shall be on sheet sizes 22" x 34". Original sheets shall be good quality, paper.
4.  Lettering size shall be no smaller than 1/10 of an inch in height and shall be uppercase.
5.  Existing features shall be shown with dashed lines, and/or half-toned (screened).
6.  Proposed features shall be shown with solid lines. The intent is to clearly distinguish existing features from proposed improvements.
7.  Each plan set shall contain a project information/cover sheet with the following:
  - a.  Project name.
  - b.  Table of contents (if more than 3 pages).
  - c.  Vicinity map showing adequate detail and adequate vicinity data (1"=1000'-2000').
  - d.  Phone number of "One-Call" utility locator, labeled "Call Before You Dig (811)."
  - e.  City's Building Department Pre-construction/Inspection Notification phone number. (360-855-0139)
  - f.  Name and phone number of surveyor.
  - g.  Name and phone number of engineer.
  - h.  Name and phone number of owner/agent.
  - i.  Legal description.
  - j.  Signature of Postmaster indicating that mail box locations have been designated or approved by the U.S. Postal Service. (Plat only)
7.  An overall site plan shall be included if more than 3 plan sheets are used. The overall plan shall include the following:
  - a.  All natural and proposed drainage collection and conveyance systems with catch basin numbers shown.
  - b.  Property area development.

- c. \_\_\_\_\_ Right of way layout.
  - d. \_\_\_\_\_ Street names, widths, and road classification (principal, secondary, collector arterial, minor collector, or local access).
  - e. \_\_\_\_\_ All of the above shall be indexed to the detail plan sheet.
8. \_\_\_\_\_ Each sheet of the plan set shall be stamped, signed and dated by a professional civil engineer licensed in the State of Washington. At least one sheet showing all boundary survey information must be provided that has been stamped by a professional land surveyor licensed in the State of Washington (Plat).
  9. \_\_\_\_\_ A title block shall be provided on each plan sheet. The title block shall list at a minimum the development title, the name, address and phone number of the firm or individual preparing the plan, a revision block, page (of pages) numbering and sheet title (e.g. road and drainage, grading, erosion/sedimentation control).
  10. \_\_\_\_\_ Location and label of each section or detail shall be provided.
  11. \_\_\_\_\_ Indicate units of measurement for all slope call outs as either % or ft./ft. Do not mix units of measurement on a plan set.
  12. \_\_\_\_\_ All match lines with matched sheet number (stationing) shall be provided.
  13. \_\_\_\_\_ All division or phase lines shall be indicated with the proposed limits of construction under the permit being applied for.
  14. \_\_\_\_\_ Wetland shall be labeled with the number from the wetland inventory, or shall be labeled as "uninventoried" if such.
  15. \_\_\_\_\_ The City's Standard Notes that apply to the project shall be provided on the plans.
  16. \_\_\_\_\_ City's standard approval block located in lower right corner of all drawings. Permit number shown on top of approval block.
  17. \_\_\_\_\_ Cut & fill quantities of site earthwork.
  18. \_\_\_\_\_ Legend
  19. \_\_\_\_\_ Engineering Fees paid.

**Plan View: Site Plan and Roadway Elements**

1. \_\_\_\_\_ Show property lines, right of way lines and widths for proposed road and intersecting roads.
2. \_\_\_\_\_ Show all existing and proposed roadway features such as centerline, edge of pavement and shoulder, ditch lines, curbs and/or sidewalks. In addition, points of access to abutting properties and roadway continuations shall be shown.
3. \_\_\_\_\_ Show all roadway classifications, existing and proposed.
4. \_\_\_\_\_ Driveway separation.
5. \_\_\_\_\_ Driveway width.
6. \_\_\_\_\_ Roadside obstacles located per WSDOT Roadside Safety Manual and Utilities Manual.
7. \_\_\_\_\_ Existing and proposed topography contours shall be shown at 2 foot (2') intervals for slopes < 20% and 5 foot (5') intervals for slopes > 20%. Contours shall extend 100 feet beyond property lines to resolve questions of setback, cut and fill slopes, drainage swales, ditches and access or drainage to adjacent property.
8. \_\_\_\_\_ 5' setback from property line(s) to proposed fill.

9. \_\_\_\_\_ 10' setback from property line(s) to proposed cut.
10. \_\_\_\_\_ The location of all existing utilities and proposed utilities (gas, water, sewer, power, etc.) (except those designed by the utility and are not available) shall be shown. All utility poles and related guy wire/anchors shall be clearly identified.
11. \_\_\_\_\_ All roads and adjoining subdivisions shall be identified.
12. \_\_\_\_\_ Right-of-way for all proposed roadways shall be shown with sufficient dimensioning to clearly show exact locations on all sections of existing/proposed dedicated public roadways.
13. \_\_\_\_\_ For subdivision projects, drawing scales shall be 1"=20'. For commercial or multi-family projects, scale shall be 1"=20'. Details may be drawn at a larger common engineering scale.
14. \_\_\_\_\_ North shall be oriented to the top or right side of the sheet unless approved by Public Works.
15. \_\_\_\_\_ Stationing shown in plan view shall read from left to right or bottom to top. The same station shall not be used more than once on a project.
16. \_\_\_\_\_ Street lighting provided on Rights-of-way, except neighborhood access and/or cul-de-sacs.

### **Plan View: Drainage Conveyance**

1. \_\_\_\_\_ All storm drainage structures shall be sequentially numbered starting from the furthest downstream structure. If tying into an existing CB or Manhole, label it as "Existing" or "EX" followed by either "CB" or "SDMH" and the City's alphanumeric name (if applicable).
2. \_\_\_\_\_ Existing storm drainage structures should be represented with hollow symbols and existing pipes represented with dashes or appropriate ACAD linetype (SD) and labeled as existing.
3. \_\_\_\_\_ Proposed storm drainage structures should be represented with solid symbols and proposed pipes represented with solid lines or appropriate ACAD linetypes (SD).
4. \_\_\_\_\_ Existing storm drainage facilities to be removed shall be clearly labeled as "existing to be removed".
5. \_\_\_\_\_ Existing storm drainage facilities to be abandoned shall be clearly labeled "abandon in place".
6. \_\_\_\_\_ Slope, length, inverts, diameter and material for all pipes, culverts and stub outs shall be shown. Material may be noted in the plan notes.
7. \_\_\_\_\_ Label all catch basins as to size and type or indicate in the plan notes.
8. \_\_\_\_\_ Show downspout and/or footing drain stub out locations to all lots intending to connect to the storm drainage system. All stub outs shall be located to allow gravity flow from the lowest corner of the lot to the connecting catch basin. Provide invert and rim elevation of all clean outs.
9. \_\_\_\_\_ Show project benchmark description, location and elevation on each sheet where elevations are called out. Provide a note that says "VERTICAL DATUM: NAVD 1988".
10. \_\_\_\_\_ Show all stub out locations for any future pipe connections.
11. \_\_\_\_\_ All drainage easements, tracts, access easements, buffers and building setback lines shall be clearly shown on the plans. Show dimensions, type of restriction and use.
12. \_\_\_\_\_ Using arrows, indicate drainage direction of hydraulic conveyance systems.
13. \_\_\_\_\_ Maximum vertical distance from the rim to i.e. for a Type 1 CB is 5.0'.
14. \_\_\_\_\_ Maximum vertical distance from the rim to i.e. for a Type 1L CB is 6.0'.
15. \_\_\_\_\_ Maximum vertical distance from the rim to i.e. for a Type 2 CB is 25.0'.
16. \_\_\_\_\_ Drainage structures having a depth in excess of 20' shall comply with WAC 296-24-81009.

17. \_\_\_\_\_ Crowns matched.
18. \_\_\_\_\_ Utility crossing clearance information shown clearly with invert of top utility and crown of bottom utility.
19. \_\_\_\_\_ Maximum of 50 lf from daylight end of pipe to structure.
20. \_\_\_\_\_ Rip rap pads sized per Table (DOE Stormwater Management Manual).
21. \_\_\_\_\_ Rip rap pads underlain by sand and gravel filter or filter fabric.
22. \_\_\_\_\_ Trees and structures can not encroach within easements over pipe systems.
23. \_\_\_\_\_ PVC adapter required at CB/MH's.
24. \_\_\_\_\_ PVC pipe used on private systems only.
25. \_\_\_\_\_ Cover over PVC pipe 3' min. & 30' max.
26. \_\_\_\_\_ Vaned grates used on flow lines grades > 6% and on State Highways.
27. \_\_\_\_\_ Pipe/building separation.
28. \_\_\_\_\_ CB located 10-20' upstream of a reverse slope driveway.
29. \_\_\_\_\_ Oil/Water separator has solid locking lids.
30. \_\_\_\_\_ Calculations shown in SSP
31. \_\_\_\_\_ Backwater calculations for entire collection system shown in SSP. No overtopping of 25-year storm, and 100-year storm conveyed safely.

**Plan View: Signage and Striping Plan**

1. \_\_\_\_\_ All proposed signage shown.
2. \_\_\_\_\_ All proposed striping shown, including long lines, intersection markings, fire lane marking, etc.
3. \_\_\_\_\_ Fire lanes marked as "Fire Lane, No Parking, Tow-Away Zone"
4. \_\_\_\_\_ Begin Tapers, End Tapers, Begin Stripe, End Stripe, etc. shown with marking description, station, and offset.
5. \_\_\_\_\_ All striping in 3M Stamark or MMA. Thermoplastic allowed only with prior approval.
6. \_\_\_\_\_ Truncated Domes Detectible Warning Pattern Shown at Every ADA curb ramp.

**Plan View: Other**

1. \_\_\_\_\_ Show the location, identification and dimensions of all buildings, property lines, streets, alleys and easements.
2. \_\_\_\_\_ Show locations of structures on abutting properties within 50 feet of the proposed project site.
3. \_\_\_\_\_ Show the location of all proposed drainage facility fencing, together with a typical section view of each.
4. \_\_\_\_\_ Provide section details of all retaining walls and rockeries including sections through critical portions of the rockeries or retaining walls. Show routing of drain lines behind walls.
5. \_\_\_\_\_ Show all existing and proposed buildings with projections and overhangs.

6. \_\_\_\_\_ Check for water and sewer connections/road cuts.
7. \_\_\_\_\_ Note that backfill over pipes and utilities in Right-of-way is as specified in the City Standard Details.
8. \_\_\_\_\_ Certificate of Sewer Availability.
9. \_\_\_\_\_ Certificate of Water Availability.
10. \_\_\_\_\_ Location of all wells and wellhead protection zone setback.
11. \_\_\_\_\_ Location of all septic tanks and drainfields.
12. \_\_\_\_\_ Sufficient spot elevations around top and bottom of walls, curb returns at  $\Delta/4$ , ADA ramps, etc.
13. \_\_\_\_\_ Building Setback lines (BSBL) or Building footprint.
14. \_\_\_\_\_ Finish Floor (F.F.) and Garage Floor (G.F.) elevation(s) or building pad elevation(s).
15. \_\_\_\_\_ Sedro-Woolley spelled correctly with a hyphen.
16. \_\_\_\_\_ Other information deemed necessary by the Planning Director, Planning Commission, City Council, Director of Public Works, or City Engineer. (LIST)

**Plan: WSDOT Channelization (Per WSDOT Plans Preparation Manual)**

1. \_\_\_\_\_ Plan drawn at scale of 1"=50'.
2. \_\_\_\_\_ Show entire roadway width and min 300' of existing highway section beyond the match points.
3. \_\_\_\_\_ Show Section, Township and Range.
4. \_\_\_\_\_ Show north arrow.
5. \_\_\_\_\_ Show street and highway names and/or designations.
6. \_\_\_\_\_ Show property lines and WSDOT Right of way lines.
7. \_\_\_\_\_ Show curve data and control points: PC, PI and PT.
8. \_\_\_\_\_ Show stations of intersecting roadway and road approaches.
9. \_\_\_\_\_ Show roadway centerline: bearing and 100' stations. (See WSDOT Right of way plan for reference stations).
10. \_\_\_\_\_ Show construction centerline: bearing and 100' stations (if applicable).
11. \_\_\_\_\_ Show beginning and ending station of roadway widening.
12. \_\_\_\_\_ Show all pavement markings, arrows, etc.: begin/end stations of tapers and striping on highway and intersecting roadway.
13. \_\_\_\_\_ Show widths of lanes on all roads.
14. \_\_\_\_\_ Show corner radii for intersecting roads.
15. \_\_\_\_\_ Show intersection left turn radii: typical R=50'.
16. \_\_\_\_\_ Show distance from centerline to face of curb. Show dimensions of curb, gutter and sidewalks.

**Profiles: Sewer, Roadway, and Drainage**

1. \_\_\_\_\_ Provide existing centerline ground profile at 50 foot stations and at significant ground breaks and topographic features, with average accuracy to within 0.1 foot on unpaved surface and 0.02 feet on paved surfaces.
2. \_\_\_\_\_ For roadways, provide final road and storm drain profile with the stationing the same as the horizontal plan, reading from left to right, to show stationing of points of curve, tangent and intersection of vertical curves, with elevations shown to the hundredth of a foot.
3. \_\_\_\_\_ On a grid of labeled lines, provide a continuous plot of vertical positioning against horizontal. The grid shall be aligned with and relate to the centerline of the right of way where applicable.
4. \_\_\_\_\_ Show finish road grade and vertical curve data; road data to be measured at centerline. Include stopping sight distance.
5. \_\_\_\_\_ Show all roadway drainage, including detention tanks, that are within the right-of-way or easement.
6. \_\_\_\_\_ Slope, length, size and type (or in plan notes or on a detail sheet) for all pipes and detention tanks shall be shown on the profile.
7. \_\_\_\_\_ Indicate the inverts of all pipes and culverts and the elevations of catch basin grates or lids. If the plan and profile elements are on separate sheets, then the elevations of catch basin grates or manhole lids and pipe inverts shall appear on both the plan view and profile view.
8. \_\_\_\_\_ For pipes that are proposed to be 2.0 feet or less below finished grade, dimension the minimum cover requirements. Pipes with less than 30" cover must be Class 50 ductile iron pipe or better.
9. \_\_\_\_\_ Indicate roadway stationing and offset for all catch basins and manholes.
10. \_\_\_\_\_ Indicate vertical and horizontal scale.
11. \_\_\_\_\_ Clearly label all profiles with respective street names and plan sheet reference numbers if drawn on separate sheets.
12. \_\_\_\_\_ Locate match points with existing pavements and show elevations.
13. \_\_\_\_\_ Label all match line locations.
14. \_\_\_\_\_ Provide profiles for all 8- inch and larger pipes and for channels (including roadside ditches which do not follow the centerline profile).
15. \_\_\_\_\_ Show the location of all known existing and proposed gas, water and sanitary sewers appurtenances and piping.
16. \_\_\_\_\_ Vertical scale shall be such that there is sufficient space in the profile view for showing utilities and labels. Clarifying details may be done at a larger engineering scale.
17. \_\_\_\_\_ Extend profile a minimum of 200 feet into existing paving when extending an existing centerline.
18. \_\_\_\_\_ Place the road vertical alignment data above the profile and storm drainage data below the proposed profile centerline.
19. \_\_\_\_\_ All pipes shall increase in size downstream only, unless written modification obtained from Director of Public Works / City Engineer.
20. \_\_\_\_\_ Manholes shall have 0.1 foot drop between inverts for Azimuth angles less than 75 degrees, and 0.2 foot drop between inverts for Azimuth angles of 75 degrees or greater.

### **Parking Areas and Driveways**

1. \_\_\_\_\_ Locate all parking & circulation areas as far away as possible from any steep slope, well head, stream, regulated lake or regulated wetland.

2. \_\_\_\_\_ Locate parking behind building, if feasible.
3. \_\_\_\_\_ Maximum number of compact stalls is 25%.
4. \_\_\_\_\_ Parking stalls delineated.
5. \_\_\_\_\_ Traffic directions, entrances and exits delineated.
6. \_\_\_\_\_ Traffic circulation does not include backing into a street.
7. \_\_\_\_\_ Surface material equal or superior to R/W material.
8. \_\_\_\_\_ Grass pavers allowed for emergency vehicle access and parking. May be considered for permanent circulation.
9. \_\_\_\_\_ Streets can not be used for circulation of traffic within site parking areas.
10. \_\_\_\_\_ Maximum driveway width is 30' for two-way traffic with 2 driveway lanes.
11. \_\_\_\_\_ Maximum driveway width is 40' for two-way traffic with 3 driveway lanes.
12. \_\_\_\_\_ Maximum driveway width is 22' for one-way traffic.
13. \_\_\_\_\_ Zero feet or a minimum 165' separation from centerline of driveway to intersection R/W PI or other driveway centerline.
14. \_\_\_\_\_ One driveway per 165' of lot frontage.
15. \_\_\_\_\_ Parking & driveways have vertical curbing along perimeter unless LID features are incorporated (porous pavements, bioretention, rain gardens, etc.).
16. \_\_\_\_\_ Minimum commercial/industrial driveway setback for property line is 9'.

### **Permanent Stormwater Facility Plans**

1. \_\_\_\_\_ Provide a scaled drawing of each proposed permanent stormwater facility including tract boundaries.
2. \_\_\_\_\_ Show existing and proposed contours at 2 foot intervals.
3. \_\_\_\_\_ Show and label maximum design water elevations and water quality elevations, if applicable.
4. \_\_\_\_\_ Dimension all berm widths.
5. \_\_\_\_\_ Show and label at least 2 sections through facility. One section must include the restrictor.
6. \_\_\_\_\_ Specify soils and compaction requirements of fill sections and berms.
7. \_\_\_\_\_ Show location of access road to control manhole and pond bottom.
8. \_\_\_\_\_ Provide elevations of all pipe inverts, grates, inlets, tanks, vaults and spot elevations of pond bottom.
9. \_\_\_\_\_ Show location and detail of overflow and emergency spillways.
10. \_\_\_\_\_ Provide plan and section view of all energy dissipaters, including rock splash pads. Specify the size of rock and thickness.
11. \_\_\_\_\_ Show bollard location on plans. Typically bollards are located at the entrance to drainage facility access roads.

### **Sewer**

1. \_\_\_\_\_ Side sewers serve to each building unless otherwise approved by Public Works. (1 per lot for every lot that has frontage facing sewer)
2. \_\_\_\_\_ Side sewers slopes based on pipe sizes..
3. \_\_\_\_\_ Side sewer 6" Ø within the right of way to 6" Ø cleanout at property / ROW / Easement line.
4. \_\_\_\_\_ Cleanouts at bends 1/8 (45°) or greater, at ROW line, and every 100 feet.
5. \_\_\_\_\_ Side sewer 8" Ø or greater with manholes at angle points. (Only if prior approval for private sewer is granted by Public Works Department.)
6. \_\_\_\_\_ Manhole spacing 350' max.



# EROSION/SEDIMENTATION CONTROL PLAN

## General

1. \_\_\_\_\_ Use the same Engineering Plan information as the base for the erosion/sedimentation control plan.
2. \_\_\_\_\_ Show all limits of clearing for flagging in the field.
3. \_\_\_\_\_ Provide perimeter control of runoff on all necessary property boundaries.
4. \_\_\_\_\_ Locate the construction entrance and detail. Specify length, width, thickness and rock size of the entrance.
5. \_\_\_\_\_ Identify drainage features such as streams, wetlands, roads, bogs, depressions, springs, seeps, swales, ditches, existing pipes and seasonal water locations.
6. \_\_\_\_\_ Specify the construction sequence.
7. \_\_\_\_\_ Identify all utility corridor locations other than roadways, associated clearing limits and erosion/sedimentation control measures for all on-site utility construction.
8. \_\_\_\_\_ Provide erosion/sedimentation control plan standard notes and details.
9. \_\_\_\_\_ Provide off-site, downstream CB protection and detail. Filter fabric placed over or under grate is not an acceptable alternative.
10. \_\_\_\_\_ Provide on-site, interim CB protection and details. Filter fabric placed over or under grate is not an acceptable alternative.
11. \_\_\_\_\_ Specify areas to receive special treatment such as jute netting, rock lining or sod.
12. \_\_\_\_\_ Show clearing limits around significant trees to remain. Limits shall be no closer than the drip line of the trees and shall be designated by a temporary five-foot chain link fence or a line of five-foot high, orange colored 2"x4" stakes placed no more than ten feet apart connected by highly visible surveyor's ribbon. (Coordinate with Planner for confirmation on which trees are to be saved and the landscape plan reflects same.)
13. \_\_\_\_\_ Show orange construction fence placed around all sensitive areas, native growth protection areas, and any other areas where construction traffic is prohibited. A minimum 8" strip of orange construction fencing may be added to the top of silt fence where the two are used in conjunction with one another. Include details.

## Conveyance

1. \_\_\_\_\_ Show all drainage pipes and ditches associated with erosion/sedimentation control.
2. \_\_\_\_\_ Provide all temporary pipe lengths, inverts and slopes and minimum pipe cover if less than two-feet.
3. \_\_\_\_\_ Show grades, dimensions, locations and direction of flow in all ditches and swales. Sufficient dimensioning shall be provided to eliminate the need for scaling a drawing.
4. \_\_\_\_\_ Provide details of bypassing off-site runoff around the clearing limits/disturbed areas and sediment pond/trap.
5. \_\_\_\_\_ Indicate locations and outlets of dewatering systems.

## Sedimentation Facilities

1. \_\_\_\_\_ Show the locations of sediment trap/ponds and all associated pipes and structures.

2. \_\_\_\_\_ Dimension sediment trap/pond berm widths and all slopes.
3. \_\_\_\_\_ Indicate the trap/pond storage required and the depth, length and width dimensions.
4. \_\_\_\_\_ Provide typical section views throughout pond and outlet structure. A minimum of two sections cut at 90° to one another are required.
5. \_\_\_\_\_ Provide typical details of gravel cone and standpipe and/or other filtering devices.
6. \_\_\_\_\_ Detail stabilization techniques for outlets/inlets.
7. \_\_\_\_\_ Detail control/restrictor device location and details.
8. \_\_\_\_\_ Provide rock specifications and details for rock check dams, if used.
9. \_\_\_\_\_ Specify spacing for rock check dams as required for actual slopes on-site.
10. \_\_\_\_\_ Provide front and side sections of typical rock check dams.
11. \_\_\_\_\_ Indicate locations and provide details and specification for silt fabric fence. Include installation detail and standard notes. Maximum upstream travel path is 100 feet.