Development Plan Review Checklist

Formatting:
- Plans stamped, signed, and dated by Engineer
- Plan Sheet size, 24” x 36”
- Scale: Cover Sheets - 1” = 200'-0" or 1" = 400'-0"
  - Plan View - 1” = 50'-0" Preferred
  - Profile View - 1" = 10'-0" Preferred
- Drawing Title Block and Sheet Number in lower right corner
- Engineering Scale & North Arrow
- Vertical datum shall be based upon an established Spokane County Benchmark (Datum Nav'd 88). Location and elevation of benchmark shall be shown on the plans.
- There needs to be a clear distinction between existing and proposed sewer lines. Preferably have proposed sewer lines be a bold line type and existing sewers should be dashed and lighter.

Cover Sheet:
- Project Information
  - Project Name
  - Project Address
  - Parcel No.(s)
  - Section, Township, Range, Quarter Section
- Engineering Firm
  - Contact Name
  - Address
  - Phone
- Owner/Developer Information
  - Contact Name
  - Address
  - Phone
- Cover Sheet shall be provided showing proposed project tied into section lines or corners. An overall schematic shall be provided on cover sheet, showing the entire project and location of proposed and existing adjacent sewer mainline and manholes (Suggested scale - 1" = 200'-0"). Label existing sewer lines as dashed lines and proposed sewer lines as solid lines with flow direction indicated. Label all manholes.
- Vicinity Map to identify project location.
- Number of units, buildings, lots, and blocks identified.
- Lot usage type identified on plans. (Single-Family, Duplex, Zero Lot Line, etc.)
- Note adjacent property address and parcel number.
- Show and label all existing and proposed easements.
**Sewer Plan and Profile:**

- Adjacent Roads identified. Include existing and proposed edge of pavement, road centerline, shoulders, and curbs. Curbs are to be shown with two (2) lines.
- Show all existing and proposed sanitary sewer lines, manholes, stubs, and easements on proposed plan noting the County Auditor’s recording number.
- Off-set 10’ from each side of the sewer main, anything that falls outside the Right-of-Way must be dedicated as a public sewer easement.
  - minimum of 20 feet wide or 1.8 times the depth of the sewer, whichever is greater.
- Lots and blocks identified.
- If more than one (1) lot/parcel or separate ownership is using a common private sewer line, plans must be submitted for approval (This will require a sewer easement, joint use, and maintenance and hold harmless agreements).
  - Private Sewer Easements outlined & noted on plans
- Length, type, size, and slope of pipe shown on plan and/or profile
  - Size shown on plan
  - Length, type, and slope shown on profile.
- Minimum cover over public sewer pipe is five (5) feet in roadway, three (3) feet in non-traffic areas. Subject to site specific approval, minimum cover in traffic areas may be reduced to three (3) feet, provided that ductile iron or C900 pipe is used in place of PVC. PVC pipe may be used at depths between 4’ and 5’ provided the pipe in encased in CSTC to finish grade.
- Provide separation from water lines in accordance with Department of Ecology requirements
  - Horizontal separation from water line is typically ten (10) feet.
  - Vertical separation for water line crossings is typically 1.5 feet, with water above sewer.
  - One and a half (1.5) feet from all other utilities.
- Sewers on 20% slope or greater shall be anchored securely with concrete anchors. Engineer shall provide anchor details and calculations to justify sizing and spacing of pipe anchors.
- Generally, gravity side sewer stubs shall have a minimum 2% slope. Use of 1% slope must be pre-approved.
  - Minimum 1:1 depth to width ratio to each side of the pipe, centered on pipe.
- Generally, minimum grades for sewer mains shall be as follows:
  - 8" = 0.40' drop per 100'
  - 10" = 0.28' drop per 100'
  - 12" = 0.22' drop per 100'
  - 15" = 0.15' drop per 100'
  - 18" = 0.12' drop per 100'
  - 24" = 0.08' drop per 100'
  - Use 1% for terminal runs or minimum lots
- Calc and note IEs for type B and C connections.

**Manholes:**

- Maximum length of sewer between manholes shall be 400 ft.
- Manholes shall be placed at all changes in grade, alignment, and pipe size.
- On public sewer lines, manholes are required at the terminal ends of all sewer lines.
Invert and rim elevations and stationing shall be on all manholes on plan and profile sheets.

- Minimum 0.10 ft drop between invert in and invert out of manhole channels.
- Match crowns of differing pipe sizes when lines meet at a manhole.
  - For interceptor connections, match 7/10ths flow elevations. In some cases, it may be allowable to match hydraulic grade lines.
- Manholes shall not be located in low point of road, vertical curves, or curb flowlines (gutters).
- There shall be a minimum of 4' from face of curb to centerline of manhole for maintenance vehicle access.
- Show all existing and proposed manholes (with county manhole numbers) and sewer lines located on or adjacent to project.
- Manholes are deep enough for future services.
- Page breaks at Manholes.

**Pressure Systems:**

- Force main sewers shall have concrete thrust blocks installed at all bends. Details and calculations to justify sizing of thrust blocks shall be provided by the Engineer (Minimum number 10 tracer wire shall be installed on force main with contact points at all surface structures).
- Force mains shall typically have at least 5 feet of cover.
- Ball valves for flushing connections and mainline shutoff valves on 3-inch diameter and smaller pressure lines shall be 2-way, full port, stainless steel ball valves, sized to match force main diameter.
- Public Corp Stops to be within 1’ of the main and a minimum 4’ from EOP.
- Valve covers shall not be located in low point of road, vertical curves, or curb flowlines (gutters).
- Where a lift station is required, pump plans and specifications must be reviewed by the Administrator in conjunction with the plans prior to final plan approval.
- When necessary, air release valves and vacuum valves shall be of the make and model acceptable to the department. Pump station control panels will be provided by the County.

**Side Sewer Service Stubs:**

- Single-family/Duplex Parcel - 4" Diameter Stub (minimum)
- Multi-family/Commercial Parcel – 6” Diameter Stub (minimum)
- Parcel > 3 ERUs - 6" Diameter Stub (minimum)
- Zero Lot Line duplexes - 4" Stub to each side (minimum)
- Stubs to be shown perpendicular to the sewer main.
- Stubs 8’ at ROW (where applicable)
- All clean-outs shall be installed at maximum 90’ intervals including distance to sewer main and clean-out riser height.
- Minimum grade for 4” pipe is 2%.
- Minimum grade for 6” pipe is 1%, provided the pipe grade is set by utilizing a surveyor’s level.
- Lines with less than 3' of cover - pipe to be C900 or DI, type "C", placed in CSBC, with transition coupler to SDR 25 on the property.
- Any ductile iron pipe used must be Class 52.
o Side Sewers shall be located a minimum of 10 feet from adjoining property lines within any new platted areas. Minimum side sewer cover depth at property lines is:
  ▪ Five (5) feet for gravity systems (Questionable lots for gravity service shall indicate finished floor elevations on plans to ensure that gravity service can be obtained).
  ▪ Four (4) feet for pressure systems.

o Sewer service stubs shall generally be designed to serve all proposed lots and/or existing structures by gravity to the extent practicable (Exceptions shall be indicated on plans, i.e. pump systems).

o Check side sewers for conflicts with other utilities: check for water lines, storm drainage systems, drywells, utility vaults, “208” swales, etc.

**Details:**

o Is a demo plan needed? Existing structure being removed with existing service lines to be abandoned.

o Standard Spokane County Wastewater System Division construction notes and details shall be included on the plans as called out.

o If a project includes a sewer tap into an existing county operated sewer main, permit and inspection is required, and a county inspector must be on site at time of tap.

o Any taps into an existing line or manhole requires a tap specific detail.
  ▪ Saddle tap
    ▪ To be no larger than half the size of the mainline. Example - 4” saddle tap in 8” mainline.
  ▪ Cut-in manhole, tee, or wye.
  ▪ Inserta-Tee

o Pre-treatment – OWS/GI. Include a detail of what is being proposed.
  ▪ Detail to be for the actual design meeting the proper requirements. Sized for 6" pipe inlet and outlet.
  ▪ Reference “Commercial Pretreatment Questionnaire,” “GCD Sizing & Permitting Checklist,” and “OWS Sizing” and “OWS Fact Sheet.”