

Checklist - Water

1. General Design Criteria for proposed water main installation.
 - a. Proposed water main design must comply with TCEQ, City of New Braunfels, and NBU Water Systems Rules and Regulations, and any other governing entity ordinance or codes. These agency requirements supersede any of the requirements listed on these guidelines.
 - b. Consultant to determine pipe material to be used dependent upon the soil classification for each project. Pipe material must meet ASTM standards.
 - c. NBU procedure for the proposed pavement section are in accordance to the governing R.O.W. owner's ordinances or codes.
 - d. All mains 16 inches or larger are to have the appropriately sized air release valves at the high point of the main. Consultant shall determine the appropriate location and size of air release valve.
 - e. The maximum distance is 1,800 feet between interconnecting grids for an 8-inch water main.
 - f. Each dwelling unit is to be within 600 feet within hose length of a fire hydrant. The 600 foot distance is measured along the R.O.W.
 - g. Permanent blow-off is required at the end of 25 feet or longer pipe sections.
 - h. The top of pipe elevation of the water main must maintain a minimum 2-foot vertical clearance where the water main crosses under existing and proposed utilities.
 - i. Steel or RCP Conduits shall be used when water mains cross under multibox culverts or large storm drain pipes (48" or greater in diameter). Conduit sizes shall be in accordance with NBU Construction Specifications.
 - j. Fire Hydrants located (off tee fittings) at the end of dead end mains and cul-de-sacs will be required in place of a permanent blow-off.
 - k. Gate valves shall be placed every 1000 feet per NBU criteria and at locations necessary to isolate the water distribution system. (Example: street intersection)
 - l. Vertical bends on all ductile iron pipes should be reinforced with retainer glands and located at each bend joint.
 - m. The use of line stoppers shall be based on the outage area. The following shall apply in the use of line stoppers for outage areas,
 - i. If number of residential customers affected is greater than or equal to ten (10).
 - ii. If any commercial customers are affected then the use of line stoppers will be determined on a case by case basis by NBU.
 - n. Consultant should indicate on plans the point of connection(s) and size and project name of existing water main in which the proposed line will be connected to.
2. Water Distribution Plans: Submitted plans shall meet all TCEQ, City of New Braunfels, and NBU rules and regulations. The following shall also apply:

- a. A location map, applicable general water notes, and any other notes pertinent to the project. Estimated quantities to be submitted with the plans.
- b. The plan scale is no smaller than 1"=50' max.
- c. A north arrow is shown on all plan sheets.
- d. Plans should be by American National Standard Institution "D" size – 24" x 36".
- e. Existing and proposed sanitary sewer, storm sewer, and all utilities are shown on plan and profile views.
- f. Engineer's Seal with signature needs to be on the final plans (each sheet, sign and date) for NBU acceptance.
- g. Engineering firm name and registered number (format F-xxxxx) on all sheets.
- h. Water mains are standard sizes: 8", 12", 18", 24", 30" and 6" multiples thereafter.
- i. Length of all mains from fitting to fitting should be indicated.
- j. Show fire hydrant detail in plans.
- k. Show all applicable callout notes.
- l. Show cut and replace of existing asphalt or sidewalk, if applicable.
- m. Plans should indicate matchline from one sheet to the next sheet, indicating stationing and sheet no. (Example: matchline station 5+00, see sheet xx of xx).
- n. The length of the proposed water main is indicated from tie-in to tie-in or matchline to matchline and shall be rounded to the nearest 1 foot increment.
- o. Street names, NCB, R.O.W., Block No, Lot Numbers are shown.
- p. NBU cover sheet with applicable general water notes, job number, and location map showing project limits is required. If Consultant does not have a job number contact NBU personnel and a job number will be provided after initial plan review.
- q. Trench Excavation Safety Protection notes shall be shown on each plan sheet. (When applicable)
- r. USGS, NBU, or TxDOT benchmarks to be shown and called out.
- s. Erosion & Sedimentation control sheet is included, if project is over Edwards Aquifer.
- t. Show all property lines, ROW, turnarounds, creeks, existing and proposed utility easements on plans.
- u. Show any permanent and temporary construction easements on plans.
- v. No turns less than 90 degrees or greater than 270 degrees are allowed.
- w. General Notes and Standard Details:
 - i. Updated NBU Water Notes should be included.
 - ii. If over Edward Recharge Zone, TCEQ Notes should be included (See website www.tceq.state.tx.us).
 - iii. If over Edward Recharge Zone, Standard Detail Drawings are required.

3. Final Acceptance:

- a. Upon completion of construction for the project, Developer's Contractor shall coordinate with the assigned water/wastewater inspector for Field Acceptance. The following items must be completed by the Contractor:
 - i. Pre-Bacteriological Test
 - ii. Hydrostatic test
 - iii. Bacteriological Test
 - iv. Deflection Test (Mandrel Test)
 - v. CCTV Sewer Inspection (digital DVD format, PACP format)
 - vi. NBU Field Acceptance Checklist
- b. Upon completion of this project, Developer's Consultant shall send project closure submittals to NBU. The following items must be submitted concurrently for final acceptance of the system by NBU:
 - i. "Record Drawings" Submittal (paper and digital format, refer to CAD Deliverables in Appendix)
 - ii. Contractor redline drawings,
 - iii. Digital copy (PDF) of the Planning Commission approved plat or amended plat.
 - iv. Developer Customer's and Contractors Payment and Receipt Affidavit (if applicable),
 - v. Backflow Prevention Test & Maintenance (T&M) report (if applicable)
- c. The Developer shall require his Contractor to guarantee the construction of all work performed in connection with the water and wastewater system for a period of one-year. The one-year warranty on all water and wastewater facilities shall commence immediately upon Final Acceptance of the project work by NBU.
- d. All items listed in Item 5.a-c. must be submitted prior to Final Acceptance by NBU. NBU will assume ownership and maintenance of the system upon the issuance of a Final Acceptance letter for the project.