



CITY OF DALLAS
WATER/WASTEWATER ENGINEERING DESIGN CHECKLIST

Project Name: _____

MAPSCO # : _____

Date: _____

Plat #: _____

REFERENCE

DFT - Drafting Standards for Water / Wastewater Pipeline Projects

MNL - Water & Wastewater Procedures & Design Manual

SDC - Development Design Procedure and Design Manual

DWG - Standard Drawings for Water & Wastewater Construction

Design & Construction Standards may be found online at www.DallasCityHall.com > Departments> Sustainable Development and Construction> Engineering> Engineering/Survey Forms, Procedures and Checklists

**Note: the following checklist items are not inclusive of all DWU and City requirements. It is the engineer's responsibility to be aware of all requirements and provide a design that is in conformance to all requirements. Failure to do will result in extended review times and review iterations, as well as additional fees.*

GENERAL

- Application for Review of Water/Wastewater Design Plans.
- Plans and profile are clear and easy to read (1"=6' Vertical scale for profile).
- Design sheet layout and title block are in conformance to latest SDC drafting standards (effective 1/2019). See Engineering Form section of SDC website for sample.
- City Plat Number filled out on plans: SXXX-XXX (To Match Most Current Effective Plat).
- Preliminary Disclaimer Block (DFT 3-8), OR seal & signature, AND TBPE Firm Registration Number
- Correct Bar Scale, MAPSCO pages, and Location Map (in the general right corner of plans).
- As-built water and wastewater map numbers are labeled on plans (Research at 320 Jefferson Room 215).
- Two Benchmarks per design sheet (One benchmark must be an approved DWU benchmark) (DFT 3-9).
- North arrow, Caution notes (including Texas one Call 1-800-245-4545).
- Include city standard General Notes on plans (see SDC Eng Form website).
- Property and Easement alignments and bearing & distance shown on Plat must match the design plans.
- ROW width and owner information labeled.
- Label Lot and Block Numbers, Lot Bearing & Dimension, Number of buildings and stories.
- All utilities in area (gas, electric, cable, etc.) must be labeled and be dimensioned to PL or easement.
- Roadway names and pavement material is labeled for all streets.
- Total proposed number of laterals & deadheads are labeled in design plan and in the General Notes.
- Mains and easements are aligned so that on-street and on-site parking spaces do not encroach.
- Existing and proposed grades, and all utilities (parallel and crossing) are shown and labeled in profile.
- Label (FB, 411Q, 685W, 421Q), install date, material, size, and direction of flow for all ex. city utilities.
- Mains are no closer than 3-feet from the edge of ROW without an easement.
- Minimum 20' spacing from structures to water; 10' min. for wastewater main.
- Sections of parallel mains and large utilities are shown in profile with distance in feet right or left of proposed pipe in profile.

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- Label stationing along proposed mains; at PI, PC, and PT of proposed water mains and curve data.
- Min. easement width for one 8"-12" main up to 8' depth is 20' (MNL 1.8.3).
- Proposed off-site mains on private property or proposed on-site mains on a lot that is not being platted require easements to be dedicated by separate instrument. ****NOTE:** failure to start the process immediately may result in the delay of your project schedule. Notify your developer/surveyor immediately. It is the developer's responsibility to manage the project's schedule and plan accordingly.
- Minimum Vertical Clearance for buildings over mains is 25' (MNL 1.8.4). This includes any easement.
- Identify any potential environmental issues including possible soil or groundwater contamination and refer to DWU Soil Manual (MNL 1.9.3).
- Are improvements proposed in TXDOT ROW? (MNL 1.14.3);
 - TxDOT Permit number shown on plans (Coordinated by SDC Staff);
 - No mains running parallel and under existing or proposed TxDOT pavement;
 - Mains under TxDOT pavement should cross at 90 degrees (if possible) and be encased;
 - No appurtenances in TxDOT Pavement.
- DART Permit number is shown on plans (Coordinated by SDC Staff) Railroad Crossing shown on plans.
- Proposed building footprint is shown without interior walls.
- Finished floor elevations and proposed flow (GPM) are labeled for each building.
- 100-year flood limits are shown and labeled on plans.
- Pavement Markings (except for parking spaces) are not shown on Water / Wastewater Plans.
- For new mains, all existing water services & wastewater laterals must be re-connected and called out.
- Water services & wastewater laterals must be at least 1 pipe size smaller than main (MNL 2.4.3 & 4.4.3).
- No trees within 10' of water/wastewater mains and no trees within water / wastewater easements.
- Proposed public Water/Wastewater improvements and lot lines are illustrated with a **BOLD** line weight and follow DWU drafting standards. This is the primary focus and should clearly stand out on the page.
- Replace mains if pipe is over 40 years old, sub-standard in size or condition (MNL 2.3 & 4.3).
- If paving over mains, replace pipe if over 40 years-old, sub-standard in size or condition (MNL 2.3 & 4.3)
- Show & label fence and retaining walls on DWU design plans

WATER

- Buildings >120 feet in height require redundant fire flow from two separate mains per DFR amendment to 2015 I.F.C. Coordinate with Dallas Fire & Rescue, Room 204.
- Water taps over 16" are not allowed (MNL 2.4.1).
- "Connect to" and "Install" notes are used in clouded labels for public water design callouts.

≤ 2" Meter Callouts:
Example

INSTALL:
1-2" DEADHEAD (IRR.) "a"

> 2" Meter Callouts:
Example

INSTALL:
1-8"X4" TEE, 1-4" VALVE, 1-4" PLUG @ 5' FLOWLINE DEPTH.
IN SEPARATE CLOUD:
"NOT THIS CONTRACT"
4" (DOM) METER AND VAULT BY SEPARATE PERMIT.
CONTACT PERMITS AT 320 E. JEFFERSON, ROOM 118
214-948-4500. MON. – FRI. 8:00AM – 4:30PM

- Proposed main is not closer than 3 feet from existing main (when running parallel).
- Verify that water connections do not cross pressure zones (MNL 2.2.4).
- Minimum water main size is 8" (12" required in CBD & Industrial Areas) (MNL 2.4.4).

- 10”, 14”, and 18” diameter water mains are not allowed, upsize accordingly (MNL 2.4.4).
- Min cover for mains 12” & smaller: Paved w/ curb & gutter 4-feet, otherwise 6-feet (MNL 2.5.2).
- Verify Pipe material & Embedment per table 2.6.3 (Class 54 DI in CBD or Airport) (MNL 2.6).
 - Offsite water without pavement requires “B5” or “modified flowable” embedment
- Verify minimum allowable curve radius for water pipes & label on plans (MNL 2.8.2).
- Water/WW separation: (Horiz 9’) or (Horiz 4’ / 2’ Vertical with 150 psi pressurized pipe) (MNL 2.10).
- No FH within 9’ of WW (includes reclaim water) (30TAC290.44(e)(6) / MNL 2.10.6).
- Crossing utilities need to be shown and elevations labeled at the crossing.
- Correct TCEQ protection is referenced at required WW / water crossings.
- Reducer must be on “through” side of a tee connection only (not on branch) (MNL 2.11.1.2).
- 4-way Cross-type intersecting connections are not allowed; must use 2 tees or Type D (MNL 2.11.1.4.2).
- Gate valves are used for 16” diameter main & smaller (MNL 3.2.1).
- Valves should be located at an offset from the street centerline intersection. Projection of property line limits along main alignment.
- Number (circled ①) gate valves along public mains and FH leads (exclude meter service leads).
- A tee must have a minimum of 2 valves (MNL 3.2.2.3).
- Consult with Dallas Fire & Rescue in Room 210 for all fire protection/ hydrant coverage requirements.
- Place required FH prior to cul-de-sacs and ≥ 8 ” dead-end mains (MNL 2.12.1).
- Dead end main with FH and no services must be less than 100’ in length or loop the main to avoid stagnant water in dead end main. (Only 1 FH allowed on a dead end main) (MNL 2.12).
- Main serving FH must be 8” min. & lead (100’ max.) to FH must be 6” (50’ max. for 6”) (MNL 3.3).
- Bollards in traffic areas for vertical facilities (i.e. FH) and meters in pavement (DWG 237).
- Only one FH is out of service when a 3-valve section is shut down.
- Fire hydrants shall be placed outside radius of curb; and be within 2.5’-7.5’ of back of curb (MNL 3.3.2).
- Must replace FH if over 2-years old and provide callout on plans to “Ex. Fire Hydrant shall be removed, salvaged, and delivered to 2901 Municipal St. or 9805 Harry Hines Blvd., Mon – Fri 8a – 4p. Coordinate with DWU – Heavy Repairs 214-670-8035 or 214-670-6274”.
- Contractors shall deliver ALL removed (salvaged) fire hydrants to either 2901 Municipal St. or 9805 Harry Hines Blvd. DWU Material Services Division staff at both locations can assist receiving the items. For questions, concerns, or additional assistance contact 214-670-8035 for 2901 Municipal St. and 214-670-6274 for 9805 Harry Hines Blvd
- Minimum of one (1) water service to each lot with no service crossing lot lines (MNL 2.13.1).
- No size on size meters allowed without special approval from DWU Distribution.
- Meter locations (ex. & prop) must be shown on drawing (MNL 2.12.2)
- Abandoned mains and services shall be cut and plugged at the main in the street. (MNL 2.14).
- Salvage valves over 24” in size as requested by distribution (MNL 3.14.2.2).
- FH’s and water services can be used as Air Release Valves on 8” and 12” mains. (MNL 3.6.1).
- Flush points that are required at a dead-end main shall be the Automatic type, sized 2” min.
- Minimum size of deadheads that can be connected to multiple services:

1” Deadhead	=	2 – 5/8” or 2-3/4”
1-1/2” Deadhead	=	2-1” or 4-3/4”
2” Deadhead	=	6-3/4” or 4-1”

WASTEWATER

- “Connect to” and “Construct” notes are used in boxed labels for public wastewater design callouts.
- All proposed mains profiled with flowline elevations and utility crossing flowlines & clearance labeled.
- Parallel water main shall be shown and labeled on WW profile with offset distance and direction labeled.
- Label Q_{75} (aka allowable capacity), Q_{PROP} (new + exist.), and Velocity on WW profile.
- Label existing mains to be abandoned. Label must include the year main was built.
- Small diameter wastewater mains connecting to larger diameter main shall match at crown.
- Main Min. & Max. pipe slope designed per Table 4.4.4 **IF full flow conditions** (MNL 4.4.5).
- Min. cover for 12” & smaller: un-paved 6’, highway 6’, paved 4’ (MNL 4.5.2).
- Verify Pipe Materials and Embedment callouts (MNL 4.6.3).
- Offsite main without pavement cover requires “B5” or “modified flowable” embedment.
- Main is straight between manholes (WWMH) and pipe material may not be changed between WWMH.
- WWMH required at all change in alignment, grade, size, material, and main intersections (MNL 5.2.1).
- Possible future connection requires WWMH with stub-outs.
- Replace brick vaults and wastewater manholes with applicable standard concrete structure.
- Maximum WWMH spacing 6”-15” (500’), 18”-30” (800’), 36”-48” (1000’) (MNL 5.2.4).
- Type-S (Pressure) WWMHs required in 100-yr floodplain and/or special flood area. (DWG 313).
- Main is only allowed in the high bank of a creek (MNL 4.7.1).
- No WWMHs allowed in flow path of watercourse, creeks or drainage areas. (MNL 5.2.1).
- External Drop MHs required for ≥ 24 ” difference between any flow in and flow out (MNL 5.2.9).
- Construct WWAD at end of main if no future connection is expected (requires 3.5’ of cover) (MNL 5.4.1)
- Each lot must have a WW lateral. Services cannot cross lot lines (MNL 4.12.1).
- WW lateral to be a minimum horizontal distance of 10-feet downstream of water service (MNL 4.12.2).
- No service taps are allowed on 18” or larger mains without approval and requires gas-sealed manhole (MNL 4.4.1 & 4.11, DWG 307).
- WW lateral sizing per (MNL 4.12.3); have 2% slope (1% min.) and 2’ cover min. (MNL 4.12.4).
- Fixture count of (commercial dev.) & number of units (Multi-Fam) must be labeled (MNL 3.12.4.3).
- Building finished floor elevation must be ≥ 18 ” above Controlling WWMH rim elevation or provide a **recorded** Covenant Agreement for Backflow protection (Forms 11.10 and 11.26). ****NOTE:** failure to start the process immediately may result in the delay of your project schedule. It is the developer’s responsibility to manage the project’s schedule and plan accordingly.
- I, the undersigned, am the legal Engineer of Record for this project and certify that I have read, completed, and understand that the requirements set forth in this checklist is not inclusive of all the City’s standards; and have designed the submitted engineering plans in accordance to ALL City requirements. Furthermore, I understand that all easements/agreements that are to be dedicated by separate instrument shall be submitted, reviewed, approved and recorded prior to any permit and construction releases. It is my and the private development team’s responsibility to manage the project’s schedule accordingly.**

Engineer of Record Printed Name

Engineer of Record Signature

Date

TBPE Registered Engineering Firm Name: _____

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