

<u>DISTRICT NOTES AND PLAN APPROVAL PROCEDURES</u>		<u>PAGE</u>
1.	General Utility Plans	2
2.	Water Plans	3
3.	Sewer Plans	4
4.	District Acceptance Notes	6
5.	General Notes	7
6.	Sanitary Sewer Notes	9
7.	Water Main Notes	11

SECTION V

(2008)

DISTRICT PLAN APPROVAL PROCEDURES

The purpose of this approval procedure check list is to familiarize all interested parties in the procedures followed by the District concerning District plan approvals.

PLAN CHECK - CHECK LIST

The following shall be included, where applicable, on all plans submitted to the District Engineer.

I. GENERAL UTILITY PLANS

A. Cover Sheet

The following must be included on the Cover Sheet:

1. Name of Project
2. Vicinity and location Maps
3. P.E. Stamp and Signature
4. Sheet Index
5. Fire Department Signature Block
6. Notification Block
7. Reviewed by Signature Block
8. District Engineer Signature Block
9. Contact List

B. Overall Utility (Water and/or Sewer)

1. Required Notes (See attached sheets for examples of General Notes, Water Main and Sanitary Sewer notes required by the District)
2. All Street Names
3. North Arrow and Scale (1"=100' Maximum)
4. Indicate individual sheet numbers for specific sections of lines to be shown on following sheets.
5. Lot and block number and from lot dimensions.
6. A list of quantities shown for both sewer and water.

C. Title Blocks

1. Title, Date, Sheet Number
2. Designed by, Drawn by, Checked by.

II. WATER PLANS

A. Overall Sheet

1. All Fire Hydrants and Valves must be numbered.
2. Fire Hydrant and Valve numbers must begin with an abbreviation of the project title. The sequence on numbers should be logical and non-confusing.
3. Water mains are generally located 10' east or north of the street centerlines. Water mains shall be located a minimum of 5.0 feet from the lip of the curb and gutter pan on street sides.
4. All water lines serving more than 15 lots must be looped.
5. Sheet numbers relating to specific plan and profile sheets should be shown.
6. "As-builts" must have all bend, and appurtenance locations stationed from the street centerline stationing. All pipe types and materials used must be indicated.

B. Plan and Profile Sheet

1. The entire water main must be profiled.
2. Where possible, plan should be located in line above profile.
3. Plan should include all fire hydrant and valve numbers, pipe lengths and size, and bend locations with thrust blocks.
4. Profile should indicate the location and depth of all bends and appurtenances.
5. Street names, lot and block numbers and North Arrows.
6. Match lines with sheet numbers on both plan and profile.
7. Distances from street centerline or property line of appurtenances that are located on curved streets. Centerline dimensions are preferred. All appurtenances are to be located by dimensions in two directions.
8. Plan scale: horizontal 1" = 50'

9. Sheet sizes shall be 24" x 36".

III. SEWER PLANS

A. Overall Sheet

1. All MH numbers, distances and sizes of lines, directional flow arrows.
2. Sewers are generally located 5' south or west of street centerlines. On curved streets, manholes may be located on centerlines providing no portion of the sewer line crosses the street centerline. Design should attempt to minimize the number of manholes. The centerline of sanitary sewer shall be a minimum of 5' from the lip of curb and gutter pan on the street sides.
3. Extra notes, such as tie-ins to the existing lines, and verification of existing inverts and compaction locations prior to start of new construction, should be shown.
4. Manholes sequencing should be logical and non-confusing. All subdivision manhole numbers must begin with the abbreviation of the subdivision.
5. "As-builts" must have all wye locations, stationed from downstream manhole, and must indicate type of pipe and materials used.
6. Sheet numbers relating to specific plan and profile sheets should be shown.
7. Sewer Hydraulic data including Q, V, D, D, S, N, and peak flow factor at the point, or points where proposed sewer is tied into existing sewer. This should be based on Manning's Formula for flow in open conduits and flow generation per applicable jurisdictional agency.

B. Plan and Profile Sheet

1. Where possible, plan should be located in line above profile.
2. Plan should indicate manhole numbers, distances between manholes, size of pipe, grade, flow directions, and interior angles of sewer lines at manholes.
3. Profile should include manhole numbers, depth of cut on manholes, length and size of pipe, invert flow direction, and invert elevation.
4. Grade shall be calculated by dividing the difference between the outlet of the upstream manhole and the inlet of the downstream manhole (as shown) by the distance between centers of the two manholes.
5. Street names, lot and block numbers and North Arrows.

6. Match lines with sheet numbers on both plan and profile.
7. Distances from street centerline or property line of manholes that are located on curved streets. Centerline dimensions are preferred. All manholes are to be located by dimensions in two directions.
8. Plan scale: horizontal 1" = 50'.
9. Sheet sizes shall be 24" x 36".

DISTRICT ACCEPTANCE NOTE

1. Upon completion of sanitary sewer and water construction and testing, the Developer or Contractor shall contact the District for probationary acceptance inspection. A punchlist will be provided the Developer and Contractor upon completion of the initial walk-thru and Probationary Acceptance will be issued following completion and acceptance of the work outlined in the punchlist.
2. The Contractor will be held responsible for the proper functioning of the lines for up to two (2) years from the date of probationary acceptance of the lines by the District. Any malfunction during this period of guarantee shall be remedied by the Contractor to the satisfaction of the District Engineer at no expense to the District.
3. The date of final acceptance will be indicated in the conditions of the Probationary Acceptance Letter. The Developer shall be responsible for contacting the District for final inspection and final acceptance.

GENERAL NOTES

1. All construction shall comply with Parker Water and Sanitation District Specifications.
2. The Contractor shall contact all appropriate utility companies and the Town of Parker prior to the beginning of any construction. Contractor shall be responsible for locating any existing utility (including depths) which may conflict with the proposed construction. All existing utilities shall be protected from damage by the Contractor. Damaged utilities shall be repaired by the Contractor at his own expense.
3. All items shown on the plans as existing are shown in approximate locations only. The actual locations may vary from the plans, especially in the case of underground utilities. Whenever contractor discovers a discrepancy in locations, he shall contact the Engineer immediately.
4. The District Engineer and other approving agencies are to be notified at least 48 hours prior to construction.
5. The Contractor shall obtain, at his expense, all permits that are necessary to perform the proposed work.
6. All concrete shall be a minimum of Class A, 6 sack, Type II, 3000-pound compression strength.
7. The Design Engineer shall submit one (1) set of rolled "As-Built" blue-line prints and electronic files to the District Engineer for approval prior to printing mylar sepia prints for the District. After approval has been granted by the District Engineer, full size mylar sepia prints shall be transmitted to the Parker Water and Sanitation District office.
8. All backfill material shall be compacted to 95% standard proctor density. Compaction tests must be submitted to District Engineer prior to probationary acceptance.
9. Trenches shall be excavated and the pipe exposed for the inspection at any location on the project if so ordered by the inspector.
10. The Contractor will be held responsible for the proper functioning of lines (water and sewer) for up to two (2) years from the date of probationary acceptance of the lines by the District. Any malfunction during this period of guarantee shall be remedied by the Contractor to the satisfaction of the District Engineer at no expense to the District.
11. Surface grades are to be within plus or minus one foot of finished grade and verification of compaction results obtained prior to the installation of water and sewer lines. Results must be submitted to the District Engineer.
12. No work shall be backfilled until the construction has been inspected and approved for backfilling by the District Engineer or representative of the District Engineer.
13. All services will be permanently marked on curb face as follows:

“X” for sanitary service sewers

“V” for water services

14. No trees shall be allowed in easements or within 8’ of any water or sanitary sewer mains in Right of Way.

15. The Contractor shall have in his possession at all times one (1) signed copy of the plans which have been approved by the Parker Water and Sanitation District and the District Engineer and one (1) copy of the latest Parker Water and Sanitation District Specification Manual.

SANITARY SEWER

1. All sanitary sewer construction shall conform to the Parker Water and Sanitation District Specification.
2. All sewer mains shall be PVC, ASTM D-3034, SDR 35 or approved equal. All sewer main size is 8" in diameter unless otherwise noted.
3. Sewer lines shall be installed 5.0 feet south or west of street centerline, unless otherwise shown on plans. Sewer lines shall be 10.00 feet from water lines except when crossing each other. Sewer lines which cross less than 1.50 feet vertically from the water main shall be encased in concrete as per Parker Water and Sanitation District Standard and Specifications. Use rubber gaskets for PVC encasement.
4. Sewer rim elevations shown are appropriate only and are not to be taken as final elevations. Ring and cover shall be set in centered concrete rings with Ram-neck for adjustment to match final pavement elevations.
5. The Contractor and survey crew shall verify elevations of existing sewer lines and manholes to be tied to prior to construction or staking of sanitary sewer.
6. No underdrain system will be allowed to be placed in mainline or sewer service trenches.
7. Sewer service tees for each unit shall be staked by a survey crew and furnished and installed by the Contractor. The Contractor shall furnish to the Engineer "as constructed" location of tees. Sewer wyes shall be used rather than tees.
8. All manholes shall be 48-inches in diameter with 24-inch ring and cover, eccentric cone unless otherwise specified.
9. Pipe bedding shall be Class "B" and shall conform to ASTM C-33 or D-448 gradation No. 6 or No. 67.
10. At least five (5) days prior to the start of construction, a pre-construction meeting will be held at the office of the District Engineer and attended by the Contractor and representatives of the other approving agencies. It will be the responsibility of the Contractor to contact the District Engineer to schedule this meeting.
11. All pipe lengths are approximate.
12. The Contractor shall have in his possession at all times one (1) signed copy of the plans which have been approved by the Parker Water and Sanitation District and the District Engineer and one (1) copy of the latest Parker Water and Sanitation District Specification Manual.
13. All manholes shall have shaped inverts.

14. All sewer lines shall be tested in accordance with the Parker Water and Sanitation District Standards and Specifications prior to acceptance or any connection to an existing sewer line.
15. Prior to start work where sewer main to be installed into existing District sewer systems. The nearest manhole to the point of tie-in shall be plugged with a plumber's plug on the inlet side by the Contractor. This plug shall remain in place until final acceptance by the District. Its purpose shall be to prevent any mud, water or other materials from entering the line during construction. The Contractor shall be responsible for pumping and cleaning these manholes and removing the plug when so instructed by the District.
16. Prior to probationary acceptance walk-through, the Client shall jet clean the entire sanitary sewer system and pump out at the plugged manhole.

WATER MAIN

1. All materials and workmanship shall be in conformance with the Parker Water and Sanitation District Engineering Standards and Specifications, latest revisions. All work shall be inspected and approved by personnel of the Parker Water Sanitation District and the District Engineer.
2. All water mains shall be per PWSD Materials Specifications.
3. All bends, plugs, reducers, and fire hydrants to be rodded or Mega-lugged. All fittings shall be wrapped with 8-mil minimum thickness polyethylene material per PWSD Materials Specifications.
4. There shall be a minimum cover of 4.5 feet over all water mains.
5. Fire hydrants shall conform to AWWA C-502 "dry barrel fire hydrants" pipe hydrant assemblies shall include all pipe, fittings, valves, materials, and labor which are necessary to install the hydrant complete in place. See Materials Specifications for approved models
6. All bends, tees, fire hydrants, blow-offs and plugs at dead end mains shall be protected from thrust by using concrete thrust blocks.
7. Precautions shall be taken to protect the interior of pipes, fittings, and valves against contamination. All openings in the pipeline shall be closed with watertight plugs when pipe laying is stopped at the close of the day's work or for other reasons, such as rest breaks or meal periods. The more closely the rate of delivery is correlated to the rate of pipe laying, the lower the risk of contamination.
7. Chlorination and flushing: All water mains shall be installed and chlorinated per Parker Water and Sanitation Standards and Specifications. The lines shall be chlorinated in accordance with ANSI/AWWA C-651-92., "Disinfecting Water Mains." Parker Water and Sanitation District requires the initial dosage rate of disinfection be at least 50 mg per liter. Chlorine tablets should be adhered to the top of the pipe section with Permatex No.1 (Red). The chlorination of any finished pipeline shall be done prior to the hydrostatic testing.
8. Hydrostatic testing: All water mains shall be tested per the requirements of the Parker Water and Sanitation District Standards and Specifications. All pipe shall be field pressure tested to a minimum of 150 psi. All testing shall be done in the presence of a Parker Water and Sanitation District inspector. Leakage for each section of pipe between lines valves shall not exceed the limits set fourth in the Parker Water and Sanitation District Standards and Specifications.
9. Valves in streets are to be located at property line extensions except for tapping tees where an additional valves shall be placed on the tapping tee. Other valve locations, such as where cross pans exist, are shown on the plans.
10. When necessary to lower or raise water lines at storm drains and other utility crossing, a minimum clearance of 1.50 feet shall be maintained between outside of pipes.

11. The Contractor shall notify the Parker Water and Sanitation District and the District Engineer at least 48 hours prior to any construction. If work is suspended for any period of time after initial start-up, the Contractor must notify the District Engineer 48 hours prior to re-start.
12. Pipe bedding shall be a clean, well-graded sand or squeegee sand in accordance with Parker Water and Sanitation District Standards and Specifications, latest revision.
13. The Contractor shall notify the public utility companies and determined the location of all existing underground utilities prior to proceeding with the excavation. All work performed in the area of the public utilities shall be performed according to the requirements of these agencies.
14. Compaction of all trenches must be attained in accordance with the soils reports and compaction test results submitted to the District Engineer prior to probationary acceptance.
15. Valve Boxes: Tyler screw-type 6 inches cast iron valve box assembly series 6860 with No. 160 oval base. Clay and Bailey screw-type 6 inch cast iron valve box assembly No. P-108 with No. 106 large oval base.
16. All pipe lengths are approximate.
17. At least five (5) days prior to the start of construction, a pre-construction meeting will be held at the office of the District Engineer and attended by the Contractor and representative of other approving agencies. it will be the responsibility of the Contractor to contact the District Engineer.