
**WATER AND SEWER STANDARDS
FOR THE
CITY OF WAGONER
OKLAHOMA**

Kenneth Peters – Public Works Superintendent

December - 2002

TABLE OF CONTENTS
WATER AND SEWER STANDARDS
CITY OF WAGONER

	PAGE(S)
DESIGN CRITERIA FOR WATER MAINS	
General	1 - 2
DESIGN CRITERIA FOR SANITARY SEWER	
General	3 - 4
<hr/> STANDARD LOCATION OF UNDERGROUND UTILITIES	
17.5' PERIMETER EASEMENT	1
BACK TO BACK 11.0' EASEMENT	1

DESIGN CRITERIA FOR WATER MAINS

GENERAL

The minimum design criteria for all public water facilities shall be the latest edition of the Oklahoma State Department of Health (OSDH) Engineering Bulletin No. 0589, Standards for Public Water Supply Facilities. These standards are amended as provided for herein.

1. All plans pertaining to distribution and treatment of public drinking water must be approved by ODEQ. The Developer shall submit two (2) additional sets of plans, as approved by the City Engineer, to be submitted to ODEQ by the City for review and approval. The Developer will be responsible for the plan review fee.
2. If a water main is within 2.0-feet vertically or 10.0-feet horizontally of a sanitary sewer, ODEQ requirements shall govern.
3. Water mains shall be on the South or East side of right-of-way, 8-feet off property line, unless otherwise approved. Water mains not in street right-of-way shall be centered in a minimum 15-foot utility easement.
4. The minimum size of water main on all section lines shall be 8 inches in diameter, eight (8) inches in diameter on half-section lines and all collector streets. The minimum size of all other mains shall be six (6) inches in diameter, except on dead end street less than 500-feet in length and a fire hydrant being located within 500-feet of all proposed or existing building sites, then a four (4) inch diameter main may be allowed. At Cul-De-Sac's Two (2) inch water mains may be allowed. If a larger water line is required the City will participate in the additional cost of the materials.
5. Maximum permissible depth of cover is 8-feet, and minimum cover is 3-feet, except at air relief valves and 3.5-feet bury fire hydrants, where a minimum of 3.5-feet is required.
6. Centerline grade above water mains and curb grade, or centerline of street grade, shall be shown on profile.
7. All fire hydrants shall be located in street right-of-way 1.5-feet from right-of-way line on extension of lot line and the finish grade elevation at the point shown. Normally, fire hydrants will have a 3.5-foot bury. A base elevation for each fire hydrant shall be shown on the profile.
8. All fire hydrants shall be located such that all proposed or existing building sites are within 350-feet of a hydrant. Maximum spacing between hydrants shall be 600-feet.
9. Fire hydrant connections to the water main shall be in accordance with standard details provided by the City Engineer's office. Fire hydrants shall not be installed on lines under six (6) inches in diameter.
10. All water pipe shall conform to the current American Water Works Association (AWWA) specifications for ductile iron pipe, steel pipe, reinforced concrete pipe, or polyvinyl chloride (PVC) pipe (AWWA C-900, DR-18).

11. If PVC pipe is used, detectable Mylar marking tape and tracer wire with plastic insulation shall be required for location of water pipe.
12. Cover over water lines at creek crossings shall be 4-foot minimum. Water lines shall be restrained joint pipe through the creek area.
13. If conduits are planned to be installed for future long services, the plan sheet shall show the location of the conduits.
14. The City Engineer's office will furnish to the Consulting Engineer normal working pressures in the area of the proposed improvements for proper selection of air release valves and the minimum pressure class for pipe which will be required.
15. Dead ends shall be minimized by looping of all mains, whenever practical. Future plans eventually connecting them to other mains to provide circulation of water is strongly recommended. Blow off hydrants shall be installed on all dead-end mains.
16. Where a rural roadway section is allowed, a separate utility easement a minimum of 15-foot wide shall be granted adjacent to the street right-of-way, in which the proposed waterline shall be placed.
17. Concrete collars 18" diameter X 3-1/2-Inch thick shall be constructed around all water valve boxes.
18. Trenches under street pavement shall be backfilled with 1-1/2-Inch Class A Rock to the pavement subgrade.
19. Water service lines shall be extended across all streets as shown on the water service detail sheet.

DESIGN CRITERIA FOR SANITARY SEWER

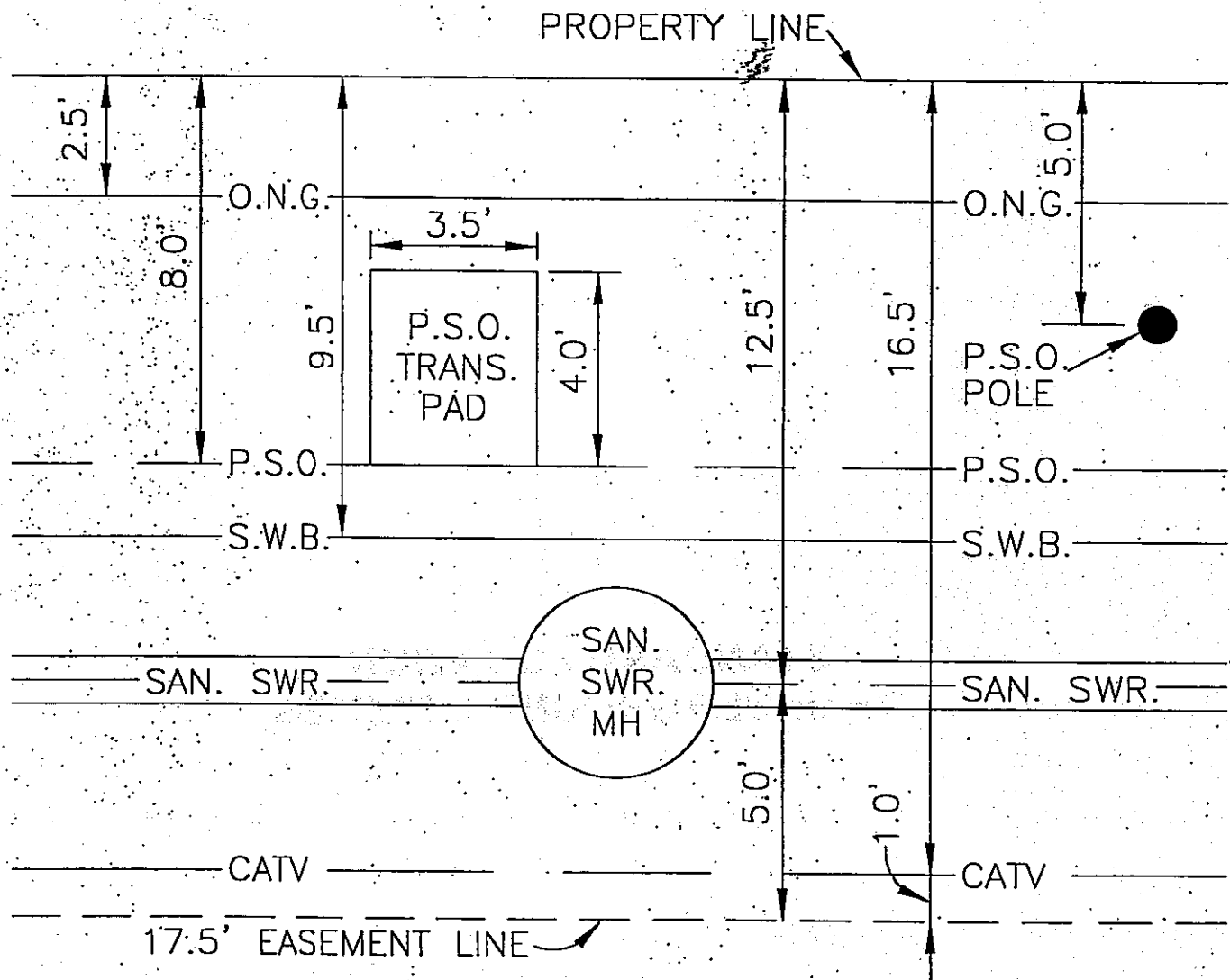
GENERAL

The minimum design criteria for all sanitary sewer collection and treatment facilities shall be the latest edition of the Oklahoma State Department of Health (OSDH) Engineering Bulletin No. 0587, Standards for Water Pollution Control Facilities.

1. All plans pertaining to the collection and treatment of public wastewater plants must be approved by ODEQ. The Developer shall submit two (2) additional sets of plans, as approved by the City Engineer, to be submitted to ODEQ by the City for review and approval. The Developer will be responsible for the plan review fee.
2. If a water main is within 2.0-feet vertically or 10.0-feet horizontally of a sanitary sewer, Oklahoma State Department of Health requirements shall govern.
3. Where possible, sewer line will be located in an easement adjacent to the street right-of-way. Other sewer lines shall be located in the south or west half of back-to-back easements, 7.0-feet from the property line. (See attached Standard Underground Utility Location). Total back-to-back easement width is 22.0-feet minimum. Sewer shall be located 12.5-feet from property line in perimeter easements which are a minimum of 17.5-feet. Any location not standard shall be approved by the City Engineer. Side lot easement widths will be based upon other utilities in the easement and the location and depth of the sewer.
4. No public gravity sewer shall be less than eight (8) inches in diameter, except that the use of six (6) inch diameter sewer may be permitted where it cannot be extended and where not more than 100-feet will be installed in anyone place.
5. Sewers terminating in a manhole shall project a minimum of 10.0-feet into the property served. If property is unplatted, service shall be provided for the minimum lot size permitted. Where a lamphole is used a long radius 90 degree elbow shall be installed. A concrete base, a minimum of 18" x 18", shall be constructed around opening of lamphole.
6. Alignment, size and grade of lines shall be subject to approval.
7. Manhole spacing shall be a maximum of 400 feet. Lampholes shall not be more than 125-feet from the nearest manhole except as approved by the City. In order to accommodate cleaning, using power equipment, 500-feet spacing will be allowed when manholes are located in street right-of-way or parking lots. Adjustments in manhole spacing may be made to allow locations adjacent to the streets.
8. Manholes shall be 4.0-feet deep minimum, or a special structure will be required. Rim elevation shall be 1.0-foot, minimum, above 100-year flood high water level. Exact manhole rim elevations shall be shown on profile and staked in field, unless matching existing grade. All manholes shall match inverts in and out (no splash), or a drop manhole shall be constructed (minimum difference in inverts shall be 2.0-feet, or as required for construction).

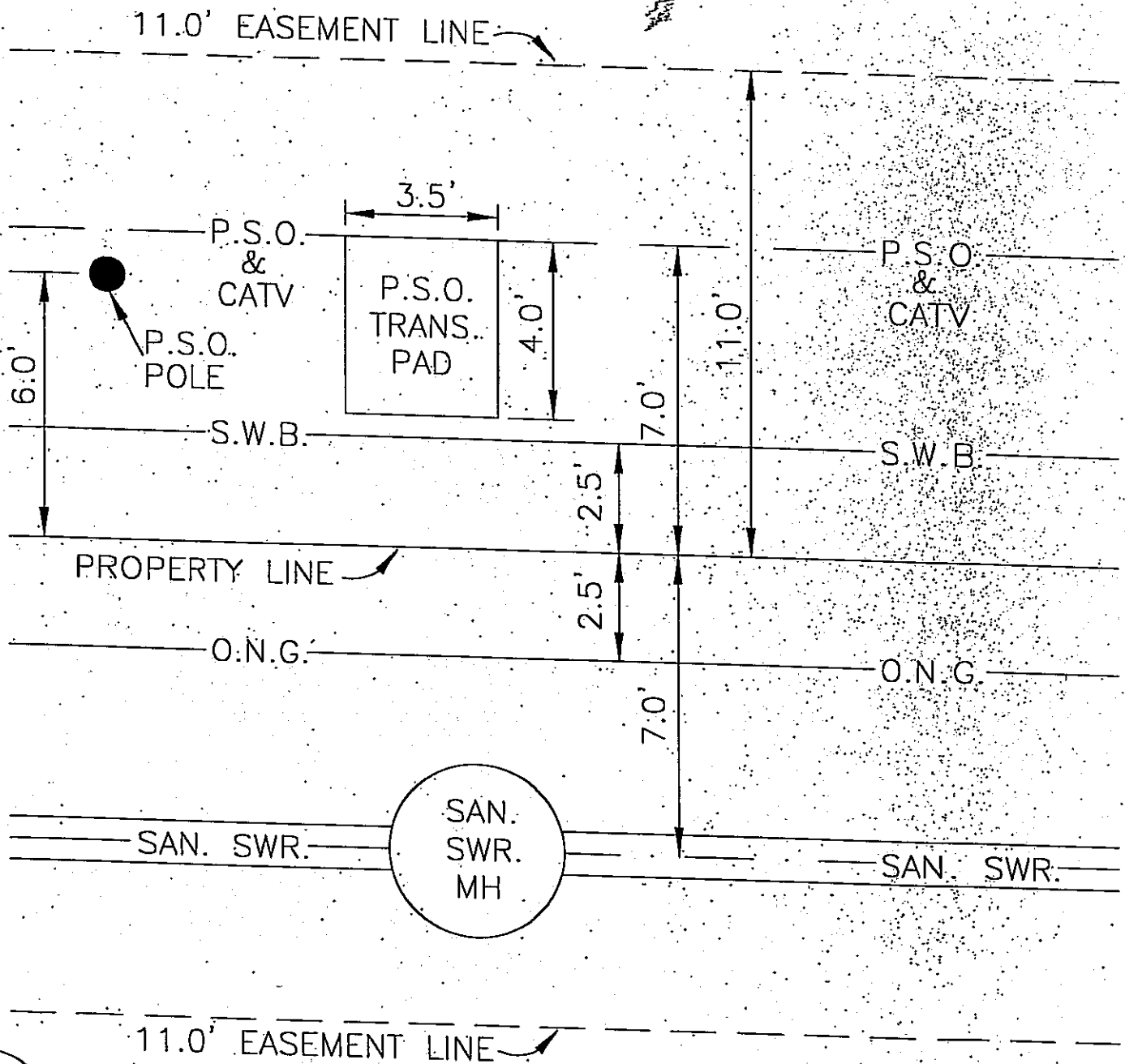
9. In-line Tees shall be installed for all platted lots and at any point where a sanitary sewer service connection is anticipated. Specify the tee size, and station the tee from the downstream manhole on the plan and profile.
10. Maximum permissible depth for service connections to property is 16-feet.
11. Design depth shall be based on service line stubbout 1.5-feet below the building pad, 2.08 percent minimum grade, and a 1.5-foot drop into the sewer.
12. All sewer pipe shall conform to the current specifications. All cuts in excess of 16-feet shall require special approval.
13. Concrete encasement or ductile iron pipe (Class 51) shall be required where the depth of cut from the ground elevation to the top of pipe is 2.5-feet or less; Concrete Cradle where centerline cut exceeds 16-feet; Water Table Cradle, where trench conditions require.
14. Cover over sewer at channel or creek crossings shall be 4.0-feet minimum. Concrete encased ductile iron pipe shall be used at these crossings. The ductile iron pipe shall extend a minimum of 10.0-feet into both banks.
15. Trenches under street pavement shall be backfilled with 1 1/2-Inch Class A Rock to the pavement subgrade.
16. Sewer service lines shall be extended across all streets as shown on the sewer service detail sheet.
17. All sewage systems shall be constructed with adequate capacity, as approved by the City Engineer, by applications of current industry accepted engineering standards applicable thereto; to serve the entire drainage area upstream from the point of consideration. The capacity shall include sewer line, lift stations and force mains, where applicable.
18. All fill areas within the utility easement shall be cross-hatched on the profile and notation made on the plans that the fill area shall be compacted to a minimum of 95 percent standard proctor density. When sanitary sewer pipes are located in the fill area, the fill shall be made and compacted to finished grade, then trenched for sanitary sewer excavation.

**STANDARD LOCATION
OF UNDERGROUND UTILITIES**



17.5' perimeter easement

STANDARD LOCATION OF UNDERGROUND UTILITIES



BACK TO BACK 11.0' EASEMENTS

**STANDARD LOCATION OF
UNDERGROUND UTILITIES**

STANDARD LOCATION OF
UNDERGROUND UTILITIES
IN THE AREA OF THE
NEW YORK CITY
OFFICE OF THE
DEPARTMENT OF
CITY PLANNING
AND CONSTRUCTION