

# Engineering Development General Checklist For Plan Design Submittal

## General/Streets

1. Show 1' contours
2. Show street dimensions.
  - a. Residential – 50' minimum ROW, 300' minimum centerline radius, 25' minimum tangent between reverse curves.
  - b. Industrial, Commercial, Collectors – 60' minimum ROW, 600' minimum centerline radius, 50' minimum tangent between reverse curves. Major Streets – 2000' minimum centerline radius, 100' minimum tangent between reverse curves.
  - c. Alleys – 20' ROW
3. Maximum cul-de-sac length is 800' for single family, 500' for other land uses.
4. Show subdivision boundaries, including existing right-of-way widths.
5. All streets intersect at 90-degree angles.
6. Provide easements (DE, PUE, etc.) as needed.
7. Show sidewalks on both sides of the proposed streets.
8. Double frontage single family lots prohibited.
9. Private drives require minimum 25' width.
10. Concrete alleys for Zero Lot Line Subdivisions are required to be 20'-wide.
11. Provide Engineer's certification on reports/plans, as required.
12. Sidewalks meeting ADA are required on both sides of the street.
13. Any requirement not cited in the subdivision ordinance will meet or exceed minimum AASHTO requirements.

## Water

1. Show water distribution schematic including pipe material.
2. Show necessary easements.
3. Hydrant spacing is 600' maximum for residential, 300' for other uses, and at every intersection.
4. Minimum 42" cover on pipes.
5. Developer's engineer should provide proof of sufficient water supply. ISO standards for fire protection govern the amount of water needed based on location of adjacent structures (houses).
6. City Fire Marshal approves hydrant locations.

# Drainage

## Hydrology and Hydraulics

1. Show drainage system schematics.
2. Provide detention (attenuation) for the five required storms: 2, 10, 25, 50, 100-yr storms. Runoff rates shall not exceed existing conditions.
3. Runoff Calculations for all required storms. Include flow paths, Tc's, Q's, I's, A's, manning's coefficients, CN's, TLAG's, etc. for existing and proposed conditions.
4. The rational method is acceptable for areas 200 acres or less. For drainage area greater than 200 acres, use HEC HMS and HEC RAS for hydrologic and hydraulic calculations.
5. Provide drainage area maps.
6. Provide input and output hydrologic and hydraulic computer runs.
7. Provide appropriate pond outlet details.
8. Provide pond outlet rating table.
9. Provide appropriate floodplain/drainage way calculations.
10. Provide required drainage easements.
11. Demonstrate no adverse impacts to upstream and downstream properties, structures, etc.
12. Consider pond outlet conditions – level spreader for sheet flow conditions, if no defined waterway (or storm sewer) is available. Consider discharge velocities – do not exceed 6 fps for grassy environment, provide energy dissipation, if necessary.
13. Show sample cross sections for typical channels/swales.
14. Show appropriate freeboard.
15. Provide concrete trickle (pilot) channels when required.
16. Show appropriate channel armoring when velocities exceed 6 fps.
17. Show appropriate channel side slopes.
18. Show adequate maintenance access for drainage infrastructure.
19. Assure that 100-yr flows are contained within the ROW.
20. Show culvert and bridge crossing calculations/runs.
21. Show conveyance of upstream flows through the property, provide necessary easements.

## **Sanitary Sewer**

1. Show sanitary sewer collection schematic and pipe material, including sewer flow calculations for sewershed, lift stations, force mains, manholes, etc.
2. Show necessary easements.
3. TCEQ requirements.

## **Electrical**

1. Show electrical plan and street light plan (to be reviewed by Electric Department).
2. Show necessary easements.
3. Streetlight spacing shall not exceed 500-feet.

## **Sites (in addition to requirements above)**

1. Show parking layout to meet City of Seguin requirements.
2. Provide 35'/55' turning radii for 20'-wide fire lanes.
3. Show sanitary sewer cleanouts at property lines, on-site sanitary/plumbing lines.
4. Show water meters at property lines, on-site water/plumbing lines.
5. Show sidewalks meeting ADA requirements, provide accessible path from the public sidewalk to the proposed building(s).
6. Secure TxDOT approval for driveways and sidewalks in State right-of-way.
7. Show easements for public utilities.
8. Show driveway/intersection spacing.