City of Dallas
Development Services - Engineering

Drainage Design Report Template

Instructions – Notes – Guidance

- A drainage report in accordance with drainage design manual section 10.3 is required for each land development project.
- A hard copy of the drainage report should be submitted to the City and a PDF of the report must be included on a CD, flash drive, or other electronic media as approved by the City.
- Developments with multiple phases or filings should submit a “master” drainage report for the entire development, and separate individual drainage report submittals with each phase or filing that reference the master report.
- Use this template for all drainage reports, including master, phase, preliminary, or final, unless otherwise directed by Development Services staff. Include only the sections applicable to the project. ***Site-specific documents and additional information may be required**.
- Include a reasonable level of backup calculations for key parameters and elements in the report narrative. Include ALL backup calculations and supporting documentation in the Appendix.
- Include photos or images, existing or historic, that may better help explain the analysis.

DRAINAGE DESIGN REPORT
[project name]
DALLAS, TEXAS

[project location]

[Design Firm Name]

[firm office location]
[firm registration #]

Engineer's Seal
Here

[DP NO. AND/OR CITY PLAN FILE NO.]

[submittal date]
[revision no. 1 date]
[revision no. 2 date]

CONTENTS

1.0 INTRODUCTION

1.1 Purpose

[the purpose of the Drainage Report is to identify drainage impacts resulting from land development activities and determine the improvements necessary to control the increase in storm water runoff and to treat the pollutants that can adversely impact water quality]

1.2 Proposed Development

[project description, size, location, background information relevant to drainage design, current zoning, proposed zoning change, reference the PD# and designated zoning if development part of a PD, discussion of future development]

1.3 Pre-Development Meeting

[discuss pre-development meeting determinations and/or CPC drainage requirements]

2.0 SITE DESCRIPTION

2.1 Drainage Basin

[Topographic conditions, precipitation data, existing land use, existing zoning, and soil type exhibits. include recent site use history]

2.2 Floodplain Status

[mapped or unmapped, applicable FEMA map, city creek study]

2.3 Outfalls

[description and discussion of each project outfall, including creeks, streams, man-made channels, enclosed storm drainage systems, or streets]

3.0 DESIGN CRITERIA

3.1 References

[List and discuss all references used in development of this report including city manuals, studies, or masterplans, previous site studies, other technical manuals, or references]

3.2 Hydrologic Criteria

[discuss the manuals, methods, models, storm events, and rainfall data used to determine peak flows, volumes, velocities, for drainage systems, detention ponds, sustainable drainage measures, and erosion control BMPs. Refer to specific sections when referencing the Drainage Design Manual]

3.3 Hydraulic Criteria

[discuss the manuals, methods, models, storm events, water surface elevations, and starting hydraulic grade line elevation used to design drainage systems, detention ponds, sustainable drainage measures, and erosion control BMPs. Refer to specific sections when referencing the Drainage Design Manual]

4.0 PRE-DEVELOPMENT CONDITIONS

4.1 Existing Drainage

[on-site and off-site drainage facilities, natural or constructed, conveyance systems, and any other special features near the project, any known water quality issues, drainage area delineation]

4.2 Probable Downstream Impacts

[identify and discuss the downstream analysis performed and probable impacts down-gradient of the project site. Reference any known stream-bank erosion issues]

4.3 Downstream Capacity

[discuss downstream capacity. reference any recorded flood events or information of property or structure flooding. if drainage outfalls uncontrolled to a street, analyze the capacity of the street in accordance with the drainage design manual section 3.2.1]

5.0 POST-DEVELOPMENT CONDITIONS

5.1 Proposed Drainage

[drainage area delineation, curve numbers/runoff coefficient, flows, water surface elevations, impervious and pervious areas of each sub-basin, building footprints or other impacts to surface flows, design efforts made to control erosion and keep sediment out of the street or watercourses, must include discussion of any expected future impacts on or connections to existing or proposed regional facilities]

5.2 Pre vs Post Development Comparison

[must include a table comparing the pre-developed and post-developed conditions at project outfalls including rates and volumes for each storm event]

5.3 Sustainable Drainage Measures

[design measures to improve water quality, mitigate urban drainage impacts, and reduce detention requirements considered]

5.4 Outfall / Downstream Impacts Mitigation

[measures included in the project to mitigate drainage impacts at the outfall and/or within the downstream analysis area (zone of influence)]

6.0 DRAINAGE PLAN

6.1 General Concept

[a general description of the proposed storm water facilities]

6.2 Specific Details

[specific details of the proposed drainage facilities including the results of the design calculations]

7.0 EASEMENTS

[identify the anticipated location of any off-site easements either on the basin map or in a separate schematic. Off-site easements will be required for proposed storm water conveyance or disposal facilities outside the project boundaries. These easements shall be obtained and recorded prior to the acceptance of the final Drainage Submittal]

8.0 CONCLUSIONS

8.1 Compliance with Standards

[discussion of how the proposed drainage facilities meet design criteria, standards, and provisions]

8.2 Summary

[summary of the development's impact to existing drainage and measures taken to mitigate]

APPENDIX

I. Vicinity Map

II. Pre-Development Drainage Area Map

III. Post-Development Drainage Area map

IV. Hydrologic Calculations

V. Hydraulic Calculations

VI. Graphs, Tables, and Nomographs

[include all calculations used to determine the size of the facilities. Typical calculations include, but are not limited to:

- Hydrologic/hydraulic calculations including pre- and post-developed peak rate and volume calculations, routing calculations, design information for outflow structures, orifice information, a pond volume rating table or pond volume calculations
- Time of concentration calculations
- Curve number (CN) or runoff coefficient (C)
- Water quality treatment calculations
- Enclosed storm drain system sizing calculations
- Inlet capacity, bypass, and secondary overflow calculations
- Calculations for ditches and natural channel
- Culvert and pipe calculations
- Energy dissipation calculations
- Flow spreadsheet calculations
- BMP sediment control calculation