

SECTION 1
DRAINAGE POLICY FOR THE CITY OF ODESSA, TEXAS

1.01 GENERAL

This chapter contains statements of drainage policy, the need for a policy, its application, and information required of anyone seeking to establish a drainage system within the jurisdiction of the City of Odessa.

1.02 NEED FOR POLICY

The provision of adequate drainage for urban areas is necessary to preserve and promote the general health, welfare, and economic well being of the citizens of that area. When planning drainage facilities, certain basic policies and fundamental principles are required to provide direction to that effort. The principles can be instituted through the application of a consistent policy. The application of the policy can be facilitated by the formulation of technical design criteria and data. Continuous application of drainage policy also insures a uniform method of evaluating proposed drainage elements' conformance with requirements for a broader drainage system.

1.03 APPLICATION OF POLICY

This policy shall govern the planning, design, construction and operation of storm drainage facilities within the City of Odessa and within all areas subject to it's extraterritorial jurisdiction. Definitions, formulae, criteria, procedures and data in the City of Odessa Drainage Criteria Manual have been developed to support this policy. The policy shall take precedence over the manual in cases of conflict.

1.04 GENERAL POLICY STATEMENTS

- A. Except as noted in C below, no improvements shall be constructed which will increase the frequency of flooding or depth of inundation of unprotected structures. This requirement will apply to all structures built in accordance with existing applicable City criteria and ordinances, and can be waived in instances of structures erected in violation of those criteria and ordinances.
- B. Peak flows shall not be increased at any location for any storm frequency, (more frequent than the 100-year storm), which will result in the inundation of unprotected structures not previously subject to inundation as a result of that same frequency storm.

- C. Subject to the requirements of the Drainage Criteria Manual, downstream conveyance may be improved to compensate for increased flows if said improvements comply with this policy.

1.05 COMPUTATIONS

Computations to support all drainage designs shall be submitted to the Director of Public Works for review. The computations shall be in such form as to provide the basis for timely and consistent review and will be made a part of the permanent record for future evaluation. The computation shall be accompanied by the certification of a Registered Professional Engineer that the design procedure is in full compliance with the requirements of this manual.

1.06 REQUIRED INFORMATION WITH DRAINAGE PLAN SUBMITTAL

The following information will be required with the drainage plan; additional data may be required by the Director of Public Works:

- A. Plan and profile shall be drawn on sheets 23" x 36" to a horizontal scale of 1" to 20' or 1" to 50' and a vertical scale of 1" to 2' or 1" to 5' (except that scales may vary on special projects, such as culverts and channel cross-sections).
- B. Good quality reproducibles of the original drawings shall be presented to the Engineering Department prior to the receipt of final approval and shall remain the permanent property of the City of Odessa.
- C. Stationing shall proceed upstream with the North arrow pointing to the top of the sheet, or to the right.
- D. Plans for the proposed drainage system shall include property lines, lot and block numbers, dimensions, right-of-way and easement lines, flood plains, street names, paved surfaces (existing or proposed); location, size and type of: inlets, manholes, culverts, pipes, channels and related structures; contract limits, out-fall details, miscellaneous riprap construction, contour lines and title block.
- E. Profiles shall indicate the proposed system (size and material) with elevations, flow-lines, gradients, left and right bank channel profiles, station numbers, inlets, manholes, ground line and curb line elevations, typical sections, riprap construction, filling details, minimum permissible slab elevations within 100-year flood

plains and adjacent to open drainage features, pipe crossings, design flow capacities, and title block.

F. Additional Specific Information - Each drainage plan will include as a minimum the following specific data:

- 1) Design Memorandum showing drainage plan computations, rationale, and assumptions utilized in developing plan. This memorandum will include "rational method" computations, N values, street capacity calculations, rainfall design frequency, and minimum grades.
- 2) Amount of impervious cover on the subject area before and after development.
- 3) Peak rate of flow before and after development for the 10-year, 25-year, 50-year, and 100-year design frequencies for each drainage way.

G. The engineer shall furnish reports, maps, and calculations necessary to complete the following checklist:

- 1) Is drainage area shown for each watershed?
- 2) Does the drainage area map show direction of flow?
- 3) Is lot grading plan included?
- 4) What is the design frequency for streets in the subdivision?
- 5) What design frequencies are culverts and storm sewers designed for?
- 6) What design frequencies are easements and channels designed for?
- 7) All calculations used shall be shown in the report to include but not be limited to, area of the watershed, time of concentration, runoff coefficient, and rainfall intensity.
- 8) Are limits of the watershed shown including off site drainage?
- 9) What is the required retention in acre feet?
- 10) What method is available for draining the basin? What is the time required to drain the basin?

- 11) How will basin be maintained?
- 12) Is it clear what will be done as a temporary solution of storm runoff during phasing?
- 13) Are all easements shown?
- 14) How will easements be maintained?
- 15) Do proposed improvements increase the frequency of flooding or depth of inundation of unprotected streets?
- 16) Does hydraulic calculation support #15?