

City of Houston

Design Manual

Chapter 1

GENERAL REQUIREMENTS

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1.01 CHAPTER INCLUDES

- A. Research and submittal requirements for projects inside the city limits of Houston or within Houston's extraterritorial jurisdiction (ETJ).

1.02 REFERENCES

The following references should be reviewed in conjunction with this manual:

- A. Latest revision of the following City of Houston Code of Ordinances:
 - 1. Article IV Chapter 33, City Surveys
 - 2. Article V Chapter 40, Street and Sidewalk
 - 3. Chapter 42, Subdivisions, Developments and Platting
 - 4. Article V, Chapter 47, Water and Sewers
- B. Texas Accessibility Standards (TAS) of the Architectural Barriers Act, Article 9102, Texas Civil Statutes.
- C. City of Houston Standard Specifications and Standard Details, latest revision.
- D. Rules and Regulations published by Texas Commission on Environmental Quality (TCEQ).
 - 1. TCEQ, Water Supply Division, Rules and Regulations for Public Water Systems, latest revision.
 - 2. TCEQ, Design Criteria for Sewer Systems, Texas Administrative Code, latest revision.
- E. State of Texas Engineering Practice Act.
- F. State of Texas Professional Land Surveying Practices Act.
- G. Storm Water Management Handbook for Construction Activities, Latest Edition as Prepared by Harris County, Harris County Flood Control District (HCFCD), and City of Houston.
- H. Harris County Public Infrastructure Department's Rules and Regulations.

1.03 DEFINITIONS

- A. City Engineer - The authorized representative of the City, or his designee, having approval authority for privately-funded projects, or having authority for administration of design and construction contracts for the City.
- B. Review Authorities - The authorized representatives of City departments, divisions, branches or sections responsible for reviewing and approving calculations and drawings for privately-funded projects and for design and construction contracts with the City.
- C. Drawings - Plan, profile, detail, and other graphic sheets to be used in a construction contract which define character and scope of the project.
- D. Design Analysis - Narratives and calculations necessary to support design of a project.
- E. Professional Engineer - An engineer currently licensed and in good standing with the Texas Board of Professional Engineers.
- F. Professional Land Surveyor - A surveyor currently registered and in good standing with State of Texas Board of Professional Land Surveying.
- G. Specifications - City of Houston Standard Specifications plus project-specific narrative descriptions of procedures, requirements, and materials for a particular project.

1.04 PLAT AND CONSTRUCTION DRAWING REVIEW PROCESS

- A. Review of plat and construction drawings by the Department of Public Works and Engineering is a required part of the overall platting process under purview of the City Planning Commission and the Planning and Development Department of the City of Houston.
- B. The process to be followed in submitting documents for review and approval of water, wastewater, storm drainage, and street paving is described by the flowchart depicted in Figure 4.1, Review and Approval Process for Plats and Drawings.
- C. Utility and paving construction in projects requiring subdivision plats is not permitted until the final plat has been released. Plat release by Department of Public Works and Engineering is authorized by signature of the Director, or his designee, on final design drawings.
- D. Construction of utilities and paving in projects not requiring a subdivision plat is not permitted until final design drawings are approved and signed by the Director, Department of Public Works and Engineering, or his designee.
- E. Signature of the Director, Department of Public Works and Engineering, or his designee, on final design drawings for utilities which are intended to remain private, does not infer

acceptance of the City for ownership or maintenance or operation of facilities indicated on the drawings.

1.05 SUBMITTALS

A. Submittal Procedures

For Privately-funded Projects:

1. To obtain review of final design drawings for both publicly-funded and privately-funded projects, first submit drawings to the Public Works and Engineering Plan Review Center for assignment of a log number before review will commence. The log number will remain in effect for one year.
2. Once a log number is assigned, reference the number in all correspondence relating to that project.
3. Obtain and complete plan review application forms for each review phase when the project is logged in. The same log number will be used for all review phases of each project unless review of a subsequent phase is delayed by over one year.
4. Plan Review Center personnel will process reviews through appropriate review teams in the Department of Public Works and Engineering.
5. If a project has begun the review process but becomes inactive for a period of 12 months from the date of the last correspondence, the project will be considered stopped, and the log number inactivated.
6. The City has a weekly one-day walk-through procedure for the signature stage of small projects. Instruction sheets for this procedure may be obtained in the Plan Review Center.
7. Projects involving construction of privately owned facilities require review and approval of any connection to a public water line, sanitary sewer, or storm sewer or to a public street, using the process defined in this manual.

For Design Contracts with the City: Submit documents in accordance with requirements of the professional engineering services contract.

B. Preliminary Design

1. Privately-funded Projects: Submit one set of the preliminary overall design concept with supporting evidence as described in Paragraph 1.07 and Paragraph 1.08.

2. Design Contracts with the City: Submit documents in accordance with requirements of the professional engineering services contract.

C. Final Design.

1. Privately-funded Projects:

- a. Submit sets of the final design drawings with prints containing preliminary review comments.
- b. For complex projects, it is recommended that a copy of the City review comments on the preliminary drawings be returned with the revised final design drawings.

2. Design Contracts with the City:

- a. Submit documents in accordance with requirements of the professional engineering services contract.
- b. Submit a copy of the City review comments on the preliminary drawings.

D. Signature Stage.

1. Submit original tracings with prints containing previous review comments.
2. Specification submittals:
 - a. Submit final design specifications for review on all City funded projects.
 - b. Provide notes on plans for all privately funded projects stating that all facilities shall be constructed in accordance with City of Houston Standards.
3. On City projects, submit final computer-generated drawing files in acceptable electronic media including vicinity maps, right-of-way drawings, construction drawings, or other information pertinent to the project. Submit surveyor's field book and electronic data in accordance with Chapter 2, Survey Requirements.
4. On privately funded projects, submit final computer generated drawing files in acceptable electronic media including plat, right-of-way maps, and construction drawings. Scanned images may be acceptable if project is less than 3 sheets.

1.06 QUALITY ASSURANCE

- A. Have surveying and platting accomplished under direction of a Professional Land Surveyor.

- B. Have recording documents sealed, signed, and dated by a Professional Land Surveyor.
- C. Have calculations prepared by or under the direct supervision of a Professional Engineer trained and licensed in disciplines required by the project scope.
- D. Have final design drawings sealed, signed, and dated by the Professional Engineer responsible for development of the drawings.

1.07 RESEARCH REQUIREMENTS

- A. Research existing utility and right-of-way information with the City departments listed below. Present and discuss the concept of the project with these same departments.
 - 1. Houston Airport System
 - 2. Department of Public Works and Engineering
 - a. Engineering and Construction Division
 - b. Planning and Development Services Division File Room
 - c. Right-of-Way and Fleet Maintenance Division and Traffic & Transportation Division
 - d. Planning and Development Services Division, Utility Planning and Analysis Branch
 - e. Public Utility Division
 - 3. Planning and Development Department
 - 4. Parks and Recreation Department
 - 5. Finance Department, Franchise Administration
- B. Research existing utilities and rights-of-way or easements for conflicts with the following public and private organizations:
 - 1. Texas Department of Transportation
 - 2. Harris County Public Infrastructure Department
 - 3. Harris County Toll Road Authority
 - 4. Other County Governments

5. Franchise Holders:
 - a. CenterPoint Energy - Entex
 - b. AT & T Bell Company
 - c. CenterPoint Energy
6. Cable television and data communications companies
7. Other utility companies:
 - a. Utility districts
 - b. Private utilities/franchises
 - c. Railroad companies
 - d. Pipeline companies

C. Verify that no restrictions or conflicts exist that will prevent approval and permitting of the project.

1.08 DESIGN REQUIREMENTS

A. Preliminary Design.

1. Privately-funded Projects:
 - a. Prior to preliminary design submittal, City reviewers are available to discuss alternate solutions for project elements where alternate designs may be considered.
 - b. Provide the Office of City Engineer with drawings in sufficient detail to describe the proposed improvements. Include proposed materials, if different from materials approved by the City. Identify any problems or conflicts associated with the project. Information furnished must be in sufficient detail for the City Engineer to assess whether the design meets current City design standards.
 - c. Provide rights-of-way and easement requirements for the project.
2. Design Contracts with the City:

- a. Participate in preliminary conferences with the City Project Manager outlining the scope of work and extent of the preliminary report.
- b. Prepare preliminary engineering studies and designs based upon the scope of work and as outlined in the professional engineering services contract with the City.
- c. Prepare the contractually specified number of copies of preliminary layouts, sketches, reports, and calculations supporting the preliminary layouts. Prepare alternate solutions, where applicable to the project, and include the engineer's specific recommendations.
- d. Prepare preliminary cost estimates for primary and alternate solutions of the proposed construction.
- e. Participate in conferences with the City to determine final design.
- f. When required by the professional services contract, provide detailed soils and geotechnical investigations and environmental investigations to support proposed construction of utilities and paving.
- g. Provide required real estate, rights-of-way, and easement requirements for the project.

B. Final Design

1. Privately-funded Projects:
 - a. Revise design to reflect comments of the City Engineer and review authorities. Include design calculations to support proposed improvements.
 - b. Provide review prints to the City Engineer and review authorities for verification and compliance with prior review comments.
 - c. Obtain required signatures from governmental agencies (other than the City of Houston) and private utility companies prior to requesting signature by the City.
 - d. Include the following note on construction drawings - "Contractor shall notify the City of Houston, Department of Public Works and Engineering (713-837-7000) 48 hours before starting work on this project."
2. Design Contracts with the City:

- a. Furnish the City, where applicable, engineering data necessary for applications for routine permits required by local, state, and federal authorities.
- b. Prepare detailed final design drawings and specifications in compliance with comments received from the City subsequent to the review of the preliminary design.
- c. Prepare detailed cost estimates and proposal forms for the authorized project.

C. Original Drawings

1. Approved drawings for projects within the city limits and within the ETJ will be assigned a City drawing number and will be filed in the City File Room prior to release back to the engineer of record. File Room record files for facilities within public rights-of-way will be available to the public. Record files associated with plants, buildings and other facilities outside public rights-of-way will be restricted pending security constraints.

END OF CHAPTER