

BUREAU OF ENGINEERING MANUAL

PART C

**OPERATIONS
AND CONTROL**



108 A

**City of Los Angeles
Department of Public Works
1968**

GENERAL PROVISIONS

PURPOSE

The Bureau of Engineering Manual is published as a reference and training guide for all Bureau employees.

The Manual will summarize and outline policy, practices and procedures that have been developed to increase the efficiency of Bureau operations. It will inform and instruct employees about the current standards in Bureau practice. The standards have been adopted to encourage consistency in the work of division and district offices of the Bureau of Engineering. The various sections of the Manual as dated in the upper right hand corner of each page supersede all prior dated Standard Practice Instructions, Office Standards, Special Orders and all other directives relating to material covered.

SCOPE

The Manual covers all phases of work in the Bureau. Elementary information available in standard engineering and public administration textbooks is not included. Graphs, office standards, and data applicable to City usage are included to help in the solution of typical problems. However, it is not practical to include each minute activity or to cover all operations in great detail; therefore, engineering and administrative knowledge are required.

This Manual is a guide. It is not a substitute for professional experience. Sound judgment must be exercised in the application of Manual provisions to specific circumstances. For routine operations and for procedures which should be normalized, the Manual instructions shall be the standard. The contents do not preclude use of different methods when special or emergency conditions warrant and when authorized by responsible supervision.

If a major deviation from the standard is necessary or desirable, the Engineer of Design shall be informed by memorandum, of such deviation so that it can be evaluated as a possible Manual change.

ORGANIZATION AND RESPONSIBILITY

The Manual will be published in thirteen parts. Each part will be a separate volume of related material. The Engineer of Design will have the primary responsibility for coordinating and preparation of the material or revisions to the Manual. The divisions designated below will, upon request, assist the

sections of the Manual and serve as interim instructions pending. In these cases, revisions to the Manual shall be prepared as soon as possible after issuance of the Special Order.

Detailed instructions for Manual revisions will be included in Part C, Operations and Control.

FORMAT

1. The Manual shall be organized on the Closed Decimal System as illustrated in Figure GP1.
2. The Manual and revisions shall be typed on sheets with headings illustrated by Figure GP2. In general, each major division of a section (140, 230, 670) should start on a new page. When it is not appropriate to start on a new page, the heading of the next major division shall start at least two inches below the preceding section to facilitate future revisions. Long, self-contained, secondary divisions (142, 234, 678) may start on a new page when appropriate.
3. Each part of the Manual shall consist of the following:
 - a. General Provisions - Identical for all parts.
 - b. Preface - A brief general statement of the scope of that part.
 - c. General Outline - A list of chapters by general subject matter, the Index and an appendices listing.
 - d. Table of Contents - A table immediately preceding each chapter and listing section numbers and topic headings.
 - e. List of Figures - A list when appropriate following the Table of Contents. Unless otherwise noted, the figures will be inserted at the end of the text.
 - f. Index - Follows the last chapter for each part.
 - g. Appendix - As needed for important references too lengthy to incorporate in the text.

DISTRIBUTION

TO CITY OFFICES

Each division and district office will be assigned at least one complete copy of the Manual (13 parts). Additional parts as necessary will be assigned to those offices with personnel who

Engineer of Design in preparing text and illustrations for the Manual. The parts of the Manual and the divisions assigned thereto are as follows:

<u>PART</u>	<u>TITLE</u>	<u>ASSIGNED DIVISION</u>
A	Administration	Administration
B	Office Guide	Administration
C	Operation and Control	Central District - One Stop Project Management Street Opening and Widening
D	Subdivisions and Dedications	Street Opening and Widening
E	Street Design	Design Research and Standards
F	Sewer Design	Design Research and Standards
G	Storm Drain Design	Design Research and Standards
H	Structural Design	Structural Engineering
I	Drafting and Cartography	Street Opening and Widening
J	Survey	Survey
K	Real Estate	Real Estate
L	Architecture	Architectural
M	Construction	Construction

REVISION

The Manual will be revised as needed to keep it current and to include new or changed policy, data and/or methods.

In general, revisions will be implemented by issuance of a "Manual Revision Transmittal" accompanying revised sheets to be inserted in the Manual. Superseded sheets shall be discarded. The transmittals will be numbered consecutively by parts and will indicate the scope of the revisions, any superseded Special Orders, and/or Memoranda and the reasons why changes are being made in the Manual.

In some cases Special Orders may be issued which will supersede

require them for frequent use.

Assignment and distribution of the Manual and its revisions will be the responsibility of the Administration Division.

TO OUTSIDE AGENCIES AND INDIVIDUALS

The Manual is intended primarily for use of Bureau personnel. However, parts relating to design and construction will be for sale. The supply of full size Manuals is limited and costs of reprinting are high. Therefore, the Manual will be microfilmed and microfiche will be available for sale at a nominal price.

The sale of Manual parts and revisions will be available at rates established by the Board of Public Works. The Forms Control Monitor, Administration Division, Bureau of Engineering, 200 North Spring Street, Los Angeles, California 90012, will process all requests for purchases.

EXPLANATION OF CLOSED DECIMAL SYSTEM

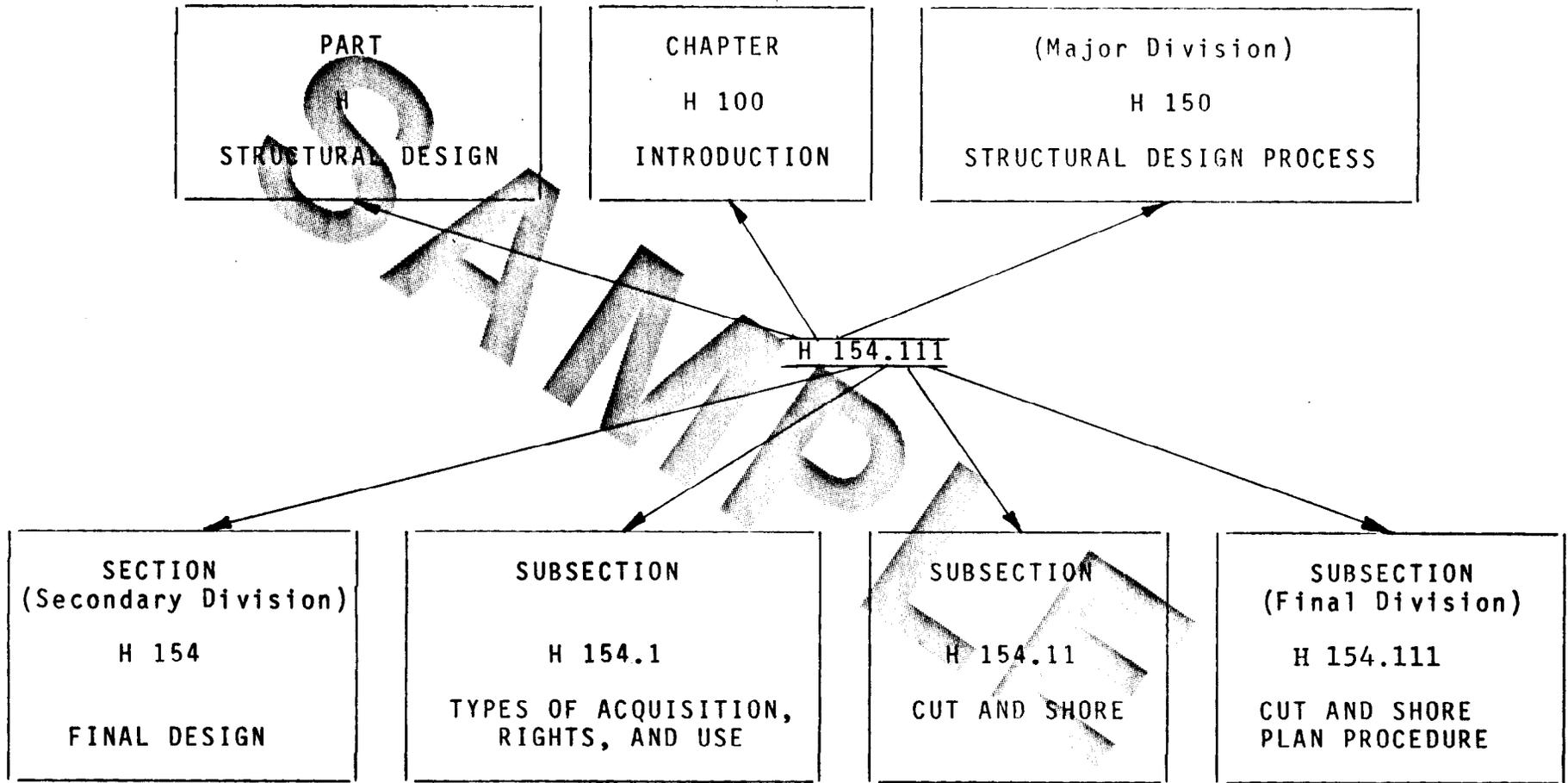


Figure GP 1

(Space 10)
(1" Margin)

Bureau of Engineering
Manual - Part E

STREET DESIGN (Line 7)
2-84 E 311

E 311 VOLUME

The specific types of traffic volume counts that are generally used by the street designer are as follows.

E 311.1 HOURLY TRAFFIC

The traffic pattern for most City streets shows considerable variation in traffic volume during different hours of the day (such as rush hour) and even a greater volume variation throughout the year. The most ...

DRH (in vehicles per hour) finds its greatest application in:

- a. Determining the magnitude of peak period.
- b. Evaluating capacity deficiencies.
- c. Establishing traffic controls, since volume is one of the warrants for the:
 - 1. Installation of signs, signals, and markings.
 - 2. Designation of through streets, one-way streets, unbalanced flow, and traffic routing.
 - (a) Prohibition of parking, stopping, and turning.
 - (b) Geometric design or redesign of streets and intersections.
 - (1) For example, a tabulation of traffic by direction of movement shows ...
 - (2) In contemplating the design of a highway and in determining its capacity, the DHV for one direction ...

DESIGN SPEEDS FOR CITY STREETS

Class of Street	Design Speed
Major	50 mph
Secondary	40 "
Collector	40 "
Local - Flat	30 "
Local - Hillside	25 "

Table 313

1" Margin

(Line 60)

C 000 GENERAL PROVISIONS

The Bureau of Engineering Manual is published as a reference and training guide for all Bureau employees. No legal liability toward the public is created or implied by its publication; the Manual is not to be interpreted as establishing legal standards.

C 010 PURPOSE

The Manual will summarize and outline policy, practice, and procedures that are designed to increase the efficiency of Bureau operations. The Manual will inform and instruct employees about the design standards current in Bureau practice. The standards have been adopted to encourage consistency in the work of Division and District Offices of the Bureau of Engineering. This Manual supersedes all previous Standard Practice Instructions, Special Orders, and all other directives relating to material covered by the Manual.

C 020 SCOPE

The Manual will cover all phases of work in the Bureau. Elementary information available in standard engineering and public administration textbooks is not included. Graphs, office standards, and data applicable to City usages are included to help in the solution of typical problems. However, it is not practical to include each minute activity or to cover all operations in great detail; therefore, engineering and administrative knowledge are required in conjunction with use of the Manual.

This Manual is a guide, and it is not a substitute for professional experience; sound judgment must be exercised in the application of Manual provisions to specific circumstances. For routine operations and for procedures which should be normalized, the Manual instructions shall be the standard. The contents of this Manual do not preclude the use of different methods when special or emergency conditions warrant and when authorized by responsible supervision.

C 030 REVISION PROCESS

It is planned to amend sections of the Bureau of Engineering Manual once a year to include new or changed data and methods. Special Orders will

be issued, as necessity arises, pending publication of the amended sections of the Manual. These Special Orders will make reference to what is to be added, deleted, or changed in the Manual. Upon issuance of an amended section of the Manual, any Special Orders superseded thereby will be voided.

In matters concerning Part C, the Operations and Control Manual, District Engineers should send recommendations or suggestions for new Special Orders or revisions to the Division Engineer, Coordinating Division. Upon approval, the Coordinating Division will incorporate revisions in the Manual.

C 040 USE OF THE MANUAL

The Manual will be available for sale to the public, or to employees who want personal copies for their private use. All other manuals are the property of the City. Each Division and District Office will be supplied with at least one complete copy of the Bureau of Engineering Manual and additional Parts as necessary to be assigned to those employees who require daily use of them.

C 050 ORGANIZATION OF THE MANUAL

The Bureau of Engineering Manual will be published in ten parts:

- Part A ADMINISTRATION
- Part B OFFICE GUIDE
- Part C OPERATIONS AND CONTROL
- Part D SUBDIVISIONS AND DEDICATIONS
- Part E STREET DESIGN
- Part F SEWER DESIGN
- Part G STORM DRAIN DESIGN
- Part H BRIDGE AND STRUCTURAL DESIGN
- Part I DRAFTING AND CARTOGRAPHY
- Part J SURVEY

Each Part will be a separate volume of related material. Each Part will be subdivided into chapters, which will be further divided into logical groupings and sub-topics.

**C 060 DESCRIPTION OF TABLE OF
CONTENTS**

Each Part of the Bureau Manual shall have a Table of Contents. The Table of Contents will list (1) section numbers, (2) topic headings in the order in which they appear in the Manual, and

(3) the date the page was issued or revised. The Table of Contents will be revised or reissued as needed to reflect changes in the Manual. Copies of the Table of Contents may be issued periodically as a check list to assure that each copy of the Manual is complete and current.