

Ordinance No. 00155

[\(Council Minutes 01/20/98\)](#)

ORDINANCE NO. 155

AN ORDINANCE of the City Council of the City of Lakewood, Washington, creating a new Chapter 12.01 of the Lakewood Municipal Code and amending Sections 12.03.020, 12.03.030, 12.03.040, 12.03.050, 12.03.060 and 12.03.070 of the Lakewood Municipal Code, relating to Street and Storm Drainage Design and Construction Standards, and revising and deleting certain Tables, Illustrations and Design Criteria and Cross Sections

WHEREAS, among the responsibilities falling on the City of Lakewood after incorporation were those dealing with the street and the storm drainage systems in the City; and,

WHEREAS, in order to address those responsibilities, the City Council adopted Ordinances providing for Interim Street and Storm Drainage Design and Construction Standards; and,

WHEREAS, during the last two years, the City has had the opportunity to implement and utilize those Interim Street and Storm Drainage Design and Construction Standards, and the opportunity to evaluate how effectively those interim regulations and standards addressed the needs of the City of Lakewood, as well as how they could be amended to better meet the needs of the City; and,

WHEREAS, following the evaluation of those interim regulations and standards, certain modifications and refinements were developed and proposed by City Staff as a way to assist the City in handling the City's street and storm drainage responsibilities; and,

WHEREAS, with the understanding that the design and construction standards for the City's street and storm drainage systems need periodically review and refinement, in light of the recent review and evaluation of the interim design and construction standards, it is appropriate that the Interim Street and Storm Drainage Design and Construction Standards be amended to incorporate modifications developed and recommended following that review; and,

WHEREAS, it would also be appropriate to identify a precedence in terms of which code provisions control where there may be a conflict between the provisions of Title 12 and other provisions of the City code, so that as to streets and public rights-of-way, Title 12 shall control.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF LAKEWOOD, WASHINGTON, DO ORDAIN as follows:

SECTION ONE: That a new Chapter 12.01 of the Lakewood Municipal Code, be, and the same hereby is, created to read as follows:

Chapter 12.01 Code Precedence

Sections:

12.01.010 Precedence over Other Code Provisions.

12.01.010 Precedence over Other Code Provisions.

In the case where any provision of Title 12 of the Lakewood Municipal Code is or could be construed as being in conflict with any other provision of the Lakewood Municipal Code, the provision of Title 12 shall control, and the provisions of the Lakewood Municipal Code shall, to the fullest extent reasonably possible, be construed and interpreted consistent with the purposes of Title 12.

SECTION TWO: That Section 12.03.020 of the Lakewood Municipal Code, be, and the same hereby is, amended to read as follows:

12.03.020 Introduction.

The purpose of these street standards is to ensure that minimum public safety requirements are met and to provide the most effective and appropriate design elements for the function each streetway serves. The appropriate design elements should address, safety, welfare, appearance, and economics of a streetway design and be consistent with the City Transportation Plan and City Comprehensive Plan policies.

These street standards are intended to serve as guidelines to direct the appropriate design features of the streetway to be built. The standards are to be followed by and are intended to assist professional engineers, planners, and developers to apply their skills and professional judgments in the design of better quality and cost effective streets. The City Engineer will be the final authority in resolving disputes concerning questions of fact in connection with work not covered by these Street Standards.

This document is organized into seven principal sections:

- A. Introduction
- B. Design Elements
- C. Functional Classification Elements
- D. Access Control
- E. Administration, Plans, Specifications and Construction
- F. References and Abbreviations
- G. Standard Details

A. Design Elements. This Section outlines and describes all of the design elements that could be included in a streetway cross section. Examples are: travel lanes, two-way left-turn lanes (TWLT), medians, drainage, curbs, sidewalks, shoulders, and ditches. The application of these design elements depends on the function of the streetway (principal, minor, collector and local street), the adjacent land use (commercial, residential, schools and parks), future transportation plans (volumes, access, functional classification, transit, bicycles and pedestrians), and guidelines for public safety.

B. Functional Classification Elements. This Section identifies design elements for each functional classification. The intent is to combine the design elements into a cross section that is consistent with the transportation plan and adjacent land uses.

C. Access Control. This Section addresses access control through the location, spacing, and design of intersections and of street approaches (residential and commercial driveways) and the intersections formed by the street approach and streetway. Streetway spacing and intersection design criteria are included in this Section.

D. Administration, Plans, Specifications and Construction. This Section provides specifications on the administrative process, contract plan formats, work in City right-of-way, streetside appurtenances, setbacks, drainage, erosion and siltation control, construction, inspection and plan revisions.

E. References and Abbreviations. Default standards and references to other relevant City documents are presented in Section 12.03.070.

F. Standard Details. Standard details for streetway design elements are provided in Section 12.03.080. Examples are standard basin details and rock wall details.

G. Shortened Designation. These City Street Standards will be cited routinely in the text as the "Standards." Reference to the "City" will be cited routinely in the text and refers to the City Engineer or designee. (Ord. 63 ' 1 (part), 1996.)

SECTION THREE: That Section 12.03.030 of the Lakewood Municipal Code, be, and the same hereby is, amended to read as follows:

12.03.030 Design Elements.

The following process is established to guide the determination of appropriate and required design elements on all City streets.

- A. Identify the functional classification, adjacent land use, and future traffic volumes.
- B. Identify the level of access control, including intersection and driveway spacing.
- C. Develop a cross section from the required and optional design elements.

A. Functional Classification. The first step in the design process is to identify the functional classification of the streetway. The functional classification[s] of existing City streets are established in Section 12.03.060 040. A narrative of the existing and future adjacent land use and environment must accompany the proposal for functional classifications of new facilities. This narrative should answer questions such as: Are schools or parks nearby? What is the expected pedestrian and bicycle activity? Will the streetway serve an industrial or commercial site?

Existing and future traffic volumes must be documented. The estimated future traffic volumes serve as the design year for the streetway. The City=s Site Development Regulations should be referred to for traffic study guidelines. Interim designs are based on a 5- or 10-year traffic study. All interim designs must contribute to the 20-year streetway design

B. Access Control. Control and management of access protects the capacity provided for in the streetway design. The functional classification of each streetway addresses the appropriate level of access control for that streetway.

Intersection and driveway spacing guidelines encourage the preservation of capacity and safe operation of streetways. Table

12.03-13, AStreetway Roadway Intersection Design Standards@, and Table 12.03-14, ADriveway Intersection Design Standards@, provide the guidelines for intersection location and design. The "Site Development Regulations" should also be consulted.

C. Cross Sections. The design elements are combined to develop a cross section within the right-of-way (ROW) or easement. The design elements are organized into four subsections within the ROW. The subsections are the travelway, streetside, border and median. Within each subsection there are optional elements that are combined to develop a cross section. This combination of features should address the functional classification, adjacent land use, and the City Transportation Plan, policies and model plans. Figure Table 12.03-A presents a generic cross section, the subsections and their design elements.

As a guideline, the following the following table reflects the number of lanes required to service a range of traffic volume:

ADT	Number of lanes required
Less than 10,500	2
10,500 - 17,000	3
Over 17,500	5

The next Chapter contains a table for each functional classification that presents each design element, the standard and application.

(Ord. 63 ' 1 (part), 1996.)

SECTION FOUR: That Section 12.03.040 of the Lakewood Municipal Code, be, and the same hereby is, amended to read as follows:

12.03.040 Functional Classification Elements.

A. Functional Classification System. Streets and highways are most effectively classified by their function, according to the character of service they are intended to provide. The primary functions of streets and highways are to provide mobility and to provide access, and the degree to which these functions are provided is considered an integral part of classifying streets. The functional classification system creates a hierarchy of classified streets.

For example, a freeway provides a high degree of mobility but very limited access, which is available only at interchanges that could be spaced several miles apart. Higher vehicle speeds and volumes are typical on these types of facilities and are, in fact, desirable. On the other hand, a local street within a residential neighborhood provides a high degree of access by way of numerous driveways to adjacent lots, and lower vehicle speeds and volumes are desired. Between these two extremes are the remainder of the streets, commonly called the arterial system, that must provide both mobility and access.

Streets are grouped into a number of different classifications for administrative, planning, and design purposes. For example, the classification system can be used for planning for new routes, improvements to existing streets, and planning for area development in concert with the transportation network and providing minimum design standards or criteria to encourage the use of the street as intended.

The main considerations for classifying streets into functional groups are the travel desires of the public, land service needs based on existing and expected land use, and the overall continuity of the system. A classification plan which fits the various classes of streets together into a logical pattern and assigns realistic improvement standards to each class will promote the highest overall level of service for the funds that are available.

City definitions for each functional classification are presented below. A table of design elements, the standard, and application for each functional classification are in the pages that follow. Geometric design criteria follow each functional classification table. The City Transportation Plan will include transportation plans for modes other than passenger vehicles. These modal plans are intended to overlay onto the functional classification system. For example, the bicycle plan Non-Motorized Transportation Plan would overlay the functional classification system to identify those streetways that should include bicycle facilities as a design element of the streetway.

The City functional classification system directly addresses all streets that are under the jurisdiction of City. State highways under the jurisdiction of the Washington State Department of Transportation are all legally designated arterials (RCW 46.61.195).

B. Classification of City Streets. All streets within the City shall be classified as principal arterials, minor arterials, collector arterials, and local access streets, feeders, local street minor, or local streets cul-de-sac=s pursuant to RCW

36.86.070.

C. City Street Classification Plan. Certain City streets shall be classified into Principal Arterials, Minor Arterials and Collector Arterials, as follows:

PRINCIPAL ARTERIALS

STREET NAME	FROM	TO
Bridgeport Way W	McChord Drive (south city limits)	Leach Creek (north city limits)
Custer Road SW & W	88th Street SW	74th Street W
Gravelly Lake Drive`	I-5 Freeway	Bridgeport Way W
Lakewood Drive SW	Bridgeport Way SW	74th Street W (north city limits)
Military Road SW	107th Ave. SW (west city limits)	Washington Blvd. SW
South Tacoma Way 112th Street S	South 80th Street (north city limits)	
Steilacoom Boulevard SW	Far West Drive (west city Limits)	South Tacoma Way
Washington Boulevard SW	Military Road SW	Gravelly Lake Drive SW
74th Street W	Custer Road W	Lakewood Drive SW
88th Street SW	Steilacoom Boulevard SW	Custer Road SW
100th Street SW	Bridgeport Way SW	South Tacoma Way
112th Street S	South Tacoma Way	Steele Street S

MINOR ARTERIALS

STREET NAME	FROM	TO
Ardmore Drive SW	Steilacoom Boulevard SW	Whitman Avenue SW
Butte Drive SW	116th Street SW	104th Street SW
Custer Avenue <u>Road</u> SW	Steilacoom Boulevard SW	88th Street SW
Edgewood Avenue SW	North Gate Road SW	Washington Blvd. SW
Far West Drive SW	112th Street SW	Steilacoom Blvd. SW
Garnet Lane SW	Onyx Drive SW	83rd Avenue SW
Gravelly Lake Drive SW	Bridgeport Way SW	Steilacoom Blvd. SW
Hipkins Road SW	104th Street SW	Steilacoom Blvd. SW
Interlaaken Drive SW	Interlaaken Drive SW	Holly Hedge Lane SW
Lakeview Avenue SW	111th Street SW	Steilacoom Blvd.
Mount Tacoma Drive SW	Holly Hedge Lane SW	Lexington Avenue SW
Mount Tacoma Drive SW	Motor Avenue SW	Bridgeport Way SW
Murray Road SW	Fort Lewis Gate Entrance	I-5 Northbound On-ramps
North Gate Road SW	Nottingham Road SW	Edgewood Avenue SW
North Thorne Lane SW	Union Avenue SW	I-5 Northbound On-ramps
Nyanza Road SW	Gravelly Lake Drive SW (S)	Gravelly Lake Drive SW (N)
Pacific Highway SW	Gravelly Lake Drive SW	South Tacoma Way
Phillips Road SW	Steilacoom Boulevard SW	Onyx Drive SW
Short Lane SW	104th Avenue SW	Interlaaken Drive SW
Union Avenue SW	Berkeley Street SW	North Thorne Lane SW
Vernon Avenue SW	Veterans Drive SW	116th Street SW
Veterans Drive SW	Nottingham Avenue	Gravelly Lake Drive SW
Whitman Avenue SW	Motor Avenue SW	Ardmore Drive SW
Wildaire Road SW	Gravelly Lake Drive SW	59th Avenue SW
40th Avenue SW	100th Street SW	96th Street SW
83rd Avenue SW	Steilacoom Boulevard SW	Garnett Lane SW
84th Street S	South Tacoma Way	Tacoma Mall Boulevard S.
87th Avenue SW	Steilacoom Boulevard SW	Onyx Drive SW
93rd Street SW	Whitman Avenue SW	Bridgeport Way SW
96th Street S	40th Avenue SW	Lakewood East City Limits
100th Street SW	Gravelly Lake Drive SW	Bridgeport Way SW
104th Street SW	Butte Drive SW	Hipkins Road SW
108th Street SW	59th Avenue SW	Pacific Highway SW
111th Street SW	112th Street SW	Lakeview Avenue SW

112th Street SW
112th Street SW
150th Street SW

Gravelly Lake Drive SW
Military Road SW
Murray Road SW

111th Street SW
Farwest Drive SW
Lakewood East City Limits

COLLECTOR ARTERIALS

STREET NAME

Alferetta Drive SW
Angle Lane SW
Avondale Road SW
Berkeley Street SW
Bristol Avenue SW
Clover Creek Drive SW
Dekoven Drive SW
Dresden Lane SW
Durango Street SW
Edgewood Avenue SW
Elwood Drive SW
Hillcrest Drive SW
Holden Road SW
Huggins Meyers Rd SW
Idlewild Road SW
Interlaaken Drive SW
John Dower Road SW
John Dower Road W
Lake City Boulevard SW
Lake Grove Avenue SW
Lakewood Mall Blvd. SW
Lake Louise Drive SW
Lake Louise Drive SW
Lake Louise Drive SW
Lake Louise Drive SW
McChord Drive SW
Meadow Road SW
New York Avenue SW
North Thorne Lane SW
Nyanza Park Drive SW
Onyx Drive SW
Onyx Drive SW
Onyx Drive SW
Phillips Road SW
Portland Avenue SW
Waverly Drive SW
West Thorne Lane SW
Whitman Avenue SW
Zircon Drive SW
59th Avenue SW
75th Street SW
78th Street SW
83rd Avenue SW
87th Avenue SW
91st Avenue SW
100th Street SW
101st Street SW
104th Street SW
104th Street SW
112th Street SW
112th Street SW

FROM

Dekoven Drive SW
Elwood Drive SW
Meadow Road SW
I-5 Southbound On-ramps
Lakewood Mall
Pacific Highway SW
Meadow Road SW
Elwood Drive SW
Steilacoom Boulevard SW
Veterans Drive SW
Angle Lane SW
Glenwood Avenue SW
Military Road SW
116th Street SW
112th Street SW
Veterans Drive SW
Steilacoom Boulevard
Custer Road W
Veterans Drive SW
Waverly Avenue SW
Lakewood Mall
100th Avenue SW
Holden Road SW
104th Street SW
Lake Louise Drive SW
New York Avenue SW
Dekoven Drive SW
Pacific Highway SW
Union Avenue SW
Nyanza Road SW
Onyx Drive SW
Berkeley Street SW
Crescent Lane SW
Union Avenue SW
Ardmore Drive SW
Onyx Drive SW
Lakewood Mall
75th Street W
Onyx Drive SW
Washington Boulevard SW
Dresden Street SW
78th Street SW
Dekoven Drive SW
Farwest Drive SW
Lake Louise Drive SW
Short Lane SW
Farwest Drive SW
Huggins Meyers Road SW

TO

Meadow Road SW
Hipkins Road SW
Gravelly Lake Drive SW
Portland Avenue SW
100th Street SW
Hillcrest Drive SW
Lake Grove Street SW
87th Avenue SW
B&I Parking Lot
North Gate Road SW
Dresden Lane SW
Clover Creek Drive SW
Lake Louise Drive SW
112th Street SW
104th Street SW
Lake Steilacoom Dr. SW
Custer Road W
75th Street W
116th Street SW
Dekoven Drive SW
Bridgeport Way SW
Holden Road SW
104th Street SW
Lake Louise Drive SW
100th Avenue SW
Bridgeport Way SW
Ardmore Drive SW
McChord Drive SW
Portland Avenue SW
Glenwood Avenue SW
87th Avenue SW
Phillips Road SW
Turquoise Drive SW
Turquoise Drive SW
North Thorne Lane SW
Mount Tacoma Drive SW
Portland Avenue SW
Steilacoom Boulevard SW
Turquoise Drive SW
Gravelly Lake Drive SW
Custer Road W
91st Avenue SW
112th Street SW
Steilacoom Boulevard SW
Zircon Drive SW
Gravelly Lake Drive SW
100th Avenue SW
Butte Drive SW
Interlaaken Drive SW
Butte Drive SW
Interlaaken Drive SW

D. Implementation Authority. The City Engineer is directed to implement the arterial designations described in this

Chapter through the use of appropriate traffic control devices.

E. Plan Available at the Development Center. The most recently adopted version of the City Street Classification Plan shall be available for inspection during normal business hours at the City Development Center, Permit Counter .

F. Functional Classification Definitions.

1. Principal Arterials. Principal arterials provide service for principal traffic movements within the City. They serve centers of activity; intra-area travel between Lakewood and other suburban centers= between larger communities, and between principal trip generators. Principal arterials serve the longest trips and carry the principal portion of trips entering and leaving the overall area. Typically they are one of the highest traffic volume corridors in the City. The design year ADT is approximately 5,000 to 30,000 vehicles per day or more. They frequently carry important intra-urban and inter-city bus routes.

The spacing of principal arterials usually varies from about 1 mile in highly developed business areas to 5 miles or more in rural areas. Service to abutting land should be subordinate to the provision of travel service to principal traffic movements; this service should be incidental to the primary functional responsibility of the street. Desirably it is located on community and neighborhood boundaries or adjacent to but not through principal shopping centers, parks, and other homogeneous areas.

2. Minor Arterials. Minor arterials interconnect with and augment the principal arterial system. Minor arterials connect principal arterials to collector arterials and small generators. They provide service to medium-size trip generators, such as less intensive commercial development, high schools and some junior high/grade schools, warehousing areas, active parks and ballfields, and other land uses with similar trip generation potential. They distribute travel to smaller geographic areas and communities than those identified with the principal arterial system. They provide service to trips of moderate length of a somewhat lower level of travel mobility than principal arterials. The design year ADT is approximately 2,500 to 15,000.

Spacing of minor arterials is usually less than 1 mile in fully developed areas. They provide intra-community continuity and are typically a continuous street with a direct rather than a meandering alignment. They may carry local bus routes. Minor arterials allow for more emphasis on land access than the principal arterial system. They usually do not penetrate identifiable neighborhoods.

3. Collector Arterials. Collector arterials distribute trips from principal and minor arterials to the ultimate destination, or may collect traffic from local streets and channel it into the principal and minor arterials systems. They carry a low proportion of traffic traveling through the entire subarea; carry a high proportion of local traffic with an origin or destination within that area. Design year ADT is approximately 2,500 to 15,000. They may be on a somewhat meandering alignment and need not be particularly long or continuous.

Spacing is typically about 1/4 mile in developed areas. Collector arterials provide both land access service and traffic circulation within residential neighborhoods, commercial, and industrial areas. They may penetrate identifiable residential neighborhoods.

4. Local Access Street System. The local access street system provides circulation and access for residential neighborhoods away from the arterial system. The local street system consists of the Local Street Feeder, Local Street Minor, and Local Street Cul-de-sac. Figure 12.03-B presents conceptual example of each local street classification as a local street system.

For developments or neighborhoods of moderate size or larger, the streets serving as primary access to and from the bordering arterial system should be considered for local street feeder classification with no direct lot access and abutting residences oriented away from it. Traffic generators, such as schools or churches, within residential areas should be considered within the local circulation pattern, not only from within the subdivision, but from adjacent neighborhoods as well. There should be a limited number of access points with the arterial streets that border the a subdivision.

Local access streets should be designed for relatively uniform low volume of traffic upon full development, particularly for Local Street Minor and Cul-de-sacs. The system should be designed to discourage excessive speeds and should minimize the necessity for traffic control devices. Internal streets with direct lot access should be discontinuous so as to discourage through traffic.

a. Local Street Feeder serves as primary access to the development from the adjacent street system. It distributes traffic from the Local Street Minor in residential neighborhoods and channels it to the arterial system. There are usually no bus routes, with the exception of possible school buses. There is no direct lot access from local street feeders. It directly serves any principal traffic generators within the neighborhood, such as an elementary school or a church. It usually serves one moderate size neighborhood or a combination of a few small developments, rather than interconnecting two or more larger

neighborhoods. It serves little, if any, through traffic generated outside the neighborhood. Typical ADT may range from about 400 to 1,500. Abutting residences are oriented away from the feeder.

b.

Local Access Streets Minor provides direct access from abutting land to the Local Arterial Street Feeder System. There are usually no bus routes on local access streets. They are typically an internal subdivision street providing circulation within the subdivision or between subdivisions. Service to through-traffic is deliberately discouraged. Local Street Minor can never be a higher classification streetway. Typical ADT may range from about 300 to 1,000.

c. Local Street Cul-de-sac is an internal subdivision street with a single outlet. It is less than 300 feet in total length. Direct lot access is provided from the stem and the bulb. It serves less than eleven (11) residences and has a typical ADT of 100 vpd or less. Local Street Cul-de-sacs can never be a through street or a street of a higher classification. (Ord. 63 ' 1 (part), 1996.)

SECTION FIVE: That Section 12.03.050 of the Lakewood Municipal Code, be, and the same hereby is, amended to read as follows:

12.03.050 Access Control.

A. Intersections: Intersection location, spacing, and design are fundamental to the management of access and preservation of capacity on the City street system. The City may require the applicant to furnish an access plan prepared by a professional engineer, that will be used by the City to review what impact the proposed project will have on the City street system.

A. Intersections. For proposed access intersecting existing City streets, intersections are classed into two types, streetways and driveways. Streetway intersection design criteria are to be used whenever the projected traffic of the proposed access is greater than 1,000 ADT, or in any case traffic signalization is warranted as defined in the Manual on Uniform Traffic Control Devices (MUTCD), current edition. All streetway/streetway intersections, public or private, will use intersection design criteria. Driveway design criteria are to be used whenever the projected traffic of the proposed access is less than 1,000 ADT.

B. Driveways: When a three-lane, or more, driveway approach is requested a traffic engineering study along with a signing, striping and traffic channelization plan shall be completed by the applicant's engineer for submittal to the City for review and approval.

The adequacy of all criteria given in this section to the particular situation in question should be checked by a proper engineering analysis approved by the City. These criteria are minimum guidelines only and may be modified according to traffic volumes and mix, topography, design speed, design vehicle requirements, and other conditions.

Design criteria for the two intersection types are shown in Tables 12.03-13 and 12.03-14. A definition of terms used in the design criteria is provided at the end of the chapter. Standard details are provided in Section 12.03.080, for residential approaches, minor approaches, and principal approaches. Residential approaches are driveways serving one or two lots; minor approaches are driveways serving 2-18 residential; and principal approaches are driveways serving 19 or more residential lots and all commercial uses.

For both types of roadway intersections and driveways, the following general criteria also shall apply.

1. Intersections and driveways should not be located on or near sharp curves, i.e., curves with radii close to AASHTO minimums. Intersections should be located sufficient distance from all curves to provide proper sight distance for vehicles on the intersecting street or drive-way and on the through street.

2. Multi-leg intersections (i.e., those with more than four legs) are not permitted. For arterial access, four-leg and "T" intersections only are encouraged. In local street networks "T" and "L" intersections only are encouraged.

3. Whenever a potential access exists to any property from a two different classification of street, the City may refuse access to the higher classified street.

4. New access locations created by the platting of property shall be unified whenever possible to create the fewest number of access points onto a City street.

5. The intersection of two local streets should be designed to operate without any traffic control device (e.g., Stop or Yield signs) whenever possible.

6. Intersections within the subdivision should be of the "T" type; for lower speed facilities of minor or cul-de-sac classification. In some instances, where traffic volumes and speeds can be expected to be below, "L" type intersections are may be acceptable.
7. Access to corner lots should be from the lesser-classified street, and at the greatest distance possible from the intersection.
8. The number of intersections should be minimized as much as possible, particularly as classification of the affected streets increases. Intersection spacing should be maximized wherever possible.
9. The City Public Works Department should be contacted regarding requirements for:
 - a. Channelization and Signing
 - b. Stop Control/Signalization
 - c. Drainage Treatment
 - d. Transit Stops
 - e. Temporary Driveways
 - f. Pedestrian Amenities (sidewalks, curb ramps, etc.)
 - g. Right-of-Way Dedication

Notwithstanding the requirements of this regulation, the number and location of intersections and driveways may be more restrictive than described herein if deemed necessary by the City. The City shall base its determination on existing and projected traffic volumes; and channelization and signalization on the existing City street; traffic, and turning movements generated by the existing and/or proposed project and other applicable traffic design criteria.

BC. Intersection - Meaning of Terms.

1. Entering Sight Distance. For stop and signal controlled intersections, distance each direction along the cross street sufficient to allow safe crossing and turning movements from the approach in question.
2. Maximum Driveway Grade. Allowable percentage grade of a driveway exclusive of the required landing grade area.
3. Maximum Landing Grade. Allowable grade of the section of the approach nearest the intersection.
4. Minimum Angle. Degree of acute angle between centerlines of intersecting streets or driveways.
5. Minimum Centerline Offset. Distance centerline to centerline of adjacent intersections, or from nearest end of turning streetway to centerline of adjacent intersection. Also, for driveways on opposite sides of the street, the distance between near edges of the driveway throats.
6. Minimum Curb Radius. Radius of the circular curve at each corner of the intersection formed by the face of curb or, if no curb is used, the edge of pavement. The actual radius to be used is subject to the turning requirements of the design vehicle.
7. Minimum Driveway Spacing. For spacing between driveways, distance between the nearside edges of adjacent driveway throats. For spacing from a street intersection, distance from nearside face of curb (or ROW line for residential applications) of adjacent street intersection to near-side edge of driveway throat. For spacing from property edge, distance from side lot line to nearside edge of driveway throat. Refer to Standard Details for street approaches.
8. Minimum Property Line Radius. Radius connecting the front property line (City ROW line) with the side lot line. (Ord. 63 ' 1 (part), 1996.)

SECTION SIX: That Section 12.03.060 of the Lakewood Municipal Code, be, and the same hereby is, amended to read as follows:

12.03.060 Administration, Plans, Specifications and Construction.

- A. Definitions.
 1. "Applicant" means the person, party, firm, corporation, or other legal entity or designee who proposed to do work regulated by these standards.
 2. "City" means the City Engineer or his/her designee.

3. "Engineer for Applicant" means a professional civil engineer, currently licensed in the State of Washington, retained by and acting on behalf of the Applicant.
4. "Surveyors for Applicant" means a professional land surveyor, currently licensed in the State of Washington, retained by and acting on behalf of the Applicant.
5. "W.S.D.O.T." means the Washington State Department of Transportation.

B. Design Standards. Except where these Standards provide otherwise, design detail, construction, and materials shall be in accordance with the following publications, current editions.

Standard Specifications for Street, Bridge and Municipal Construction published by the Washington State Department of Transportation, and the Washington State Chapter of the American Public Works Association.

Standard Plans for Street, Bridge and Municipal Construction published by the Washington State Department of Transportation.

U.S. Department of Transportation Manual on Uniform Traffic Control Devices, as amended and approved by Washington State Department of Transportation; abbreviated as the "M.U.T.C.D."

Design Manual published by the Washington State Department of Transportation.

Hydraulic Manual published by the Washington State Department of Transportation.

Construction Manual published by the Washington State Department of Transportation.

1. Bikeway: Location, design, and construction shall be as approved by the City.
2. Catch Basin: Maximum spacing of structures for storm drainage conveyance lines running within an easement area shall be 200 feet. Greater spacing may be allowed if supporting calculations indicate such longer spacing is appropriate. Structures shall have solid covers and locking lids when required by the City.

Where an approved connection of a private storm drainage system into a City system occurs, a minimum of a Type 1 catch basin shall be used. Tee connections into the side of a pipe shall not be permitted.

Maximum spacing of catch basins for contained storm sewer systems shall be 200 feet for pipe grades up to .3%. When pipe grades are .3% or greater, maximum spacing shall be 350 feet.

Maximum surface runs spacing for storm drainage catch basins on the paved streetway surface shall be as follows: based on the ability of the catch basins and infiltration systems to accommodate the runoff from the streetway surface tributary to the catch basin and on good engineering in the judgement of the City.

<u>Slope (%)</u>	<u>Maximum Spacing (ft)</u>
.7 to 1	200
1 to 6	350
6 to 8	250
8 to 12	150

a. Unless otherwise required by the City, Type 1 catch basins shall be used at the following locations or for the following situations:

- (1) When overall structure height does not exceed 8 feet.
- (2) When pipe sizes do not exceed 15 inches and connect at right angles to the long side of the structure; or 12 inches connecting to the short side.
- (3) When all pipes tying into the structure connect at or very near to right angles.

b. Unless otherwise required by the City, Type 1a catch basins must be used at the following locations or for the following situations:

- (1) When overall structure height does not exceed 8 feet.
- (2) When all pipes tying into the structure do not exceed 15 inches; connecting to the long side, or 15 inches connecting to the short side at or very near to right angles.

c. Unless otherwise required by the City, Type 2, 48-inch diameter catch basins shall be used at the following locations

or for the following situations:

- (1) When overall structure height does not exceed 15 feet.
- (2) When all pipes tying into the structure do not exceed 21 inches. Type 2 catch basins over 4 feet in height shall have standard ladders.

Metal frame and grate for catch basin and inlet, W.S.D.O.T. Standard Plan B-2a shall be used for all structures collecting drainage from the paved streetway surface.

When the street profile equals or exceeds 6% between structures, an asphalt berm as per the detail found in Section 12.03.080 C. shall be installed around the inlet of the structure.

Solid metal covers for catch basins, W.S.D.O.T. Standard Plan B-2 shall be used for all structures catch basins not collecting drainage from the streetway surface.

When required by the City, locking lids will be installed on structures containing restrictor or flow devices. The locking lids shall be of a quality and design acceptable to the City.

3. Centerline: The street construction centerline must match the right-of-way centerline unless otherwise approved by the City.

4. Clearing: The entire right-of-way shall be cleared and grubbed.

54. Closed Detention Systems: See detail in Section 12.03.080 G. Adequate access shall be provided to all closed detention systems. One access riser with standard ladder shall be provided for each 100 lineal feet of detention, but not less than 1 riser per detention facility. When outside the fenced area, the catch basins and access risers shall have solid round locking lids. The stub-end detention system shall have an access riser with standard ladder in addition to the control catch basin with flow restrictor/oil pollution device.

The detention system and access manhole shall be designed for HS 20 loading. Structural calculations will be submitted by the engineer when required by the City.

Closed detention systems shall not be permitted under the paved streetway surface.

65. Crushed Surfacing Top Course:

- a. Local street cul-de-sac and local street minor 5 inches minimum compacted depth.
- b. Local street feeder, industrial parks, and all arterials - pavement structure design required and approval from the City.

Local Access Streets:

Minimum compacted depth shall be three (3) inches unless a pavement design indicates a lesser depth is acceptable.

- Arterial Streets:

Minimum compacted depth shall be on a pavement design.

- 7. Cul-De-Sacs

- a. Permanent: See detail in Section 12.03.080 V.
 - (1) Open ditch street sections will require a 55-foot right-of-way.
 - b. Temporary: See detail in Section 12.03.080 W.
 - (1) Minimum pavement width across bulb section. Additional paving outside of the normal streetway section will not be required. The paved streetway section shall be constructed to the property line.
 - (2) The following note shall be used: "Temporary cul-de-sac, fill unpaved portion of 40-foot radius with 2 inches minimum compacted depth crushed surfacing top course and slope at 2% towards the street and level to the thickened edge."

8. Curb:

- a. Asphalt concrete, see detail in Section 12.03.080 O.
- b. Cement concrete, see detail in Section 12.03.080 P.
 - (1) Rolled curbs cannot be used on street slopes in excess of ten percent.

96. Curb/Gutter: See detail in Section 12.03.080 P.

107. Dispersion Trench: See detail in Section 12.03.080 I.

118. Ditches and Channels Outside Street Rights-of-Way: See detail in Section 12.03.080 J.

Ditch side slopes shall be 2 horizontal to 1 vertical. Flatter side slopes or riprapping may be required if side slope stabilization is necessary to prevent erosion.

Bank stabilization is required when the design flow velocities of ditches or channels exceed 5 feet per second.

Headwalls will be required at culvert entrances or exits when maximum ditch side slopes cannot be met. Ditches shall have rock-lined bottoms and side slopes at discharge points of storm sewers or culverts when design flow velocities exceed 5 feet per second. The rock blanket shall have a minimum thickness of 8 inches and extend for a minimum of 6 feet downstream from the end of the storm sewer or culvert and will be keyed into the swale section.

Where velocities exceed 5 feet per second the two sides of the ditch shall be lined with riprap with a minimum rock thickness of 8 inches. The lining shall extend to the bottom of the streetway shoulder on both sides of the ditch.

Fencing equivalent to that for drainage basins shall be required when side slopes are steeper than 4:1 and actual water depth exceeds 18 inches.

All ditches and channels shall be designed with a minimum freeboard of 0.5 feet when the design flow is 10 cubic feet per second or less and 1 foot when the design discharge is greater than 10 cubic feet per second.

Ditches and channels outside City right-of-way will require a drainage easement. A 10-foot wide access easement along one side of the ditch or channel may be necessary in addition to the normal easement width. Otherwise the easement width will be the width of the ditch or channel (measured from catch point to catch point) plus 5 feet on each side of the ditch or channel.

129. Drainage:

a. The storm drainage system shall be designed per current City standards.

b. Enclosed storm drainage will be required if:

(1) The street is classified as an arterial or local street feeder.

(2) The street gradient is six percent or more.

(3) A fifty foot right-of-way is proposed.

(4) The street serves a commercial development or a plat with lots smaller than one acre.

(5) The existing street has enclosed storm drainage.

c. Open ditches may be used if:

(1) The street is within a plat which has all lots greater than one acre unless any one of 1 through 5 above apply.

(2) The existing street has open ditches unless any one of 1 through 5 above apply.

1310. Driveways: Driveways shall be constructed in accordance with the City Site Development Regulations. Grading and restoration of the private street or driveway beyond the end of the street approach shall be done to provide a smooth, passable, and safe transition to the existing facility.

1411. Drywell: See detail in Section 12.03.080 D.

Before entering the perforated pipe system, storm drainage must pass through a City standard drywell.

Standard placement of the drywell shall be a minimum of 18 feet from the street centerline, to centerline of drywell.

Due to the size of the drywell with surrounding backfill and the location of the perforated pipe the graded shoulder width shall be increased to 10 feet or wider, if necessary, to accommodate utilities.

1512. Erosion and Siltation Control: It shall be the responsibility of the contractor to control erosion and siltation when working in existing City right-of-way.

Excavation and grading shall be done in a manner to maintain controlled drainage on the work site and to minimize the exposure of unprotected slopes to the action of precipitation or flowing ground water. When possible, existing natural vegetation shall be left intact.

Exposed slopes shall be given appropriate permanent protection as soon after completion of grading as practical.

Hydroseeding, ground cover, riprap, or other methods approved by the City shall be installed when required by the City. This shall include, but is not limited to, side slopes of drainage basins, cut and fill slopes, easements, and tracts dedicated to the City for storm drainage and other purposes.

Siltation fences shall be installed per the detail in the Section 12.03.080 H.

1613. Flow Restrictor/Oil Pollution Control Device: See detail in Section 12.03.080 B.

Structures containing the control device shall be accessible by a maintenance vehicle and shall be within security fencing when possible. If access to the control device is not secured by fencing, a locking lid shall be utilized for the structure cover.

An access street to the restrictor device shall be provided. The access street will be constructed of 2 inches of crushed surfacing top course over a base suitable to the City. A standard residential driveway shall be constructed at the approach of the access street to the City street.

Flow restrictor devices shall be placed in a Type 2 catch basin 54-inch diameter or larger if so warranted by pipe sizing. The emergency overflow outlet capacity of the restrictor device shall not be less than the combined inlet capacities.

All metal parts and surfaces must be made of corrosion-resistant material or completely galvanized.

1714. Grades:

a. Maximum grade as shown in Section 12.03.040, tables 12.03-2, 12.03-4, 12.03-6, 12.03-8 and 12.03-10 of these Standards may be exceeded for short distances of 300 feet or less, upon showing that no practical alternative exists. Exceptions which exceed 15% will require verification by the Fire Chief that additional fire protection requirements will be met. Grades exceeding 12% shall be paved with asphalt concrete (AC) or portland concrete cement (PCC). Any grade over 15 % must be PCC.

b. Grade transitions shall be constructed as smooth vertical curves except in intersections where the difference in grade is one percent or less and upon approval of the Engineer or Reviewing Agency.

1815. Gravel Base Crushed Ballast:

a. Local street cul-de-sac and local street minor - 6 inches minimum compacted depth.

b. Local street feeder, industrial parks, and all arterials - pavement structure design required and approval from the City. Minimum compacted depth shall be six (6) inches unless a pavement design indicates a lesser depth is acceptable.

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1916. Intersections: Intersection details drawn to a scale of 1" = 20' must be included as details on the street construction plans. The detail will show spot elevations every 25 feet on the street centerline, around the curb return, at the point in the intersection where the projected gutter lines of the two streets intersect, and grate elevations for drainage structures in the intersection. The intersection plan must be clearly detailed to show flow line grades and how surface drainage will be controlled at the intersection. Curb return data for lesser gradients shall be shown on the street drawings. Drainage will not be allowed to flow out of a gutter section across any portion of the intersection.

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Profile grades for all streets (public and private) intersecting onto a City street (existing or proposed) shall be designed and constructed so that adequate sight distance is available at the intersection. For design purposes the driver's eye height shall be 3.50 feet. The driver's eye shall be located a distance of 10 feet from edge of traveled way. The standard vehicle height shall be 4.25 feet.

2017. Landscaping: Landscaping within the City right-of-way must be constructed in accordance with the city=s landscaping standards, and must be approved by the Engineering Manager City.

2118. Median: See detail in Section 12.03.080 L.

The maximum width shall be 12 feet from back of curb to back of curb. The maximum height of ground cover in medians shall be 18 inches. Irrigation systems are acceptable will be required. The irrigation water meter must be located within the median.

Medians shall be landscaped in accordance with the City=s landscaping standards. All landscaping plans must be approved by the Engineering Manager City.

2219. Open Retention/Detention Basin: See detail in Section 12.03.080 F.

If the side slopes of basins are steeper than 4:1 or if the water depth exceeds 18 inches, the basin shall be fenced. The fence will be Type 1 chain link fence with pull wire in place of top rail. A 14-foot gate shall be provided for access to the basin. For

basins requiring fencing, the fence shall be placed 1 foot inside the tract boundary or a minimum of 5 feet from the top slope catch point. Maximum side slopes shall not exceed 2:1.

An access street ramp to the bottom of the basin shall be provided. The grade of the ramp will not exceed a 6:1 slope and will have a 10-foot minimum width. The access street ramp will be constructed of 2 inches of crushed surfacing top course over a base suitable to the City. A standard residential driveway shall be constructed at the approach of the access street to the City street.

A minimum of a 6-foot area from slope catch point outward shall be included as part of the basin area dedicated to the City.

The basin, including the access to the basin, shall be dedicated to the City.

Any pipe stem access to a basin shall be fenced with a Type 4 chain link fence with a 14-foot gate. The main body of the basin shall be fenced as per the above-noted requirements.

All retention/detention basins shall have a minimum of 1 foot of freeboard above the maximum design water surface elevation. Retention basins shall have a maximum design water depth of 4 feet. Detention basins with a water depth in excess of 4 feet must have the prior approval of the City.

Embankments less than 4 5 feet in height shall have a minimum 6-foot top width and slopes shall not exceed 2 horizontal to 1 vertical.

Embankments greater than 4 5 feet in height shall have a minimum 15-foot top width and slopes not to exceed 2 horizontal to 1 vertical. A key section will be included in the design if required by the City. If required by the City, the engineer will submit design data for the embankment along with a letter verifying its adequacy. The City may also require the designing engineer to verify the construction of embankment.

All embankments for basins shall be compacted as per Method C, Section 2-03.3(14)C of W.S.D.O.T. Specifications. Embankments adjacent to a stream or other body of water shall be sufficiently protected with riprap or other means acceptable to the City to prevent erosion of the basin embankment. A hydraulic analysis of the adjacent watercourse may be necessary to determine what erosion control measures may be necessary.

All constructed and graded detention basins shall be sloped no flatter than 1% toward the outlet to ensure positive drainage out of the basin. Slopes less than 1% shall require prior City approval and shall be verified by the Applicant's engineer upon construction completion.

All detention basins having a design capacity in excess of 10,000 cubic feet shall have a spillway whose overflow elevation of is 0.5 feet higher than the maximum design water surface elevation. Retention basins having a design capacity in excess of 10,000 cubic feet shall have a spillway meeting the above-noted criteria when so required by the City.

Spillway surfacing may be rock quarry spalls, asphalt concrete, or cement concrete. Rock spalls will have a minimum dimension of 4 inches and will be laid in 2 or more layers to a minimum depth of 6 inches. Asphalt concrete shall be 2 inches minimum compacted depth over base of 2 inches compacted depth crushed surfacing top course. Cement concrete shall be 6 inches of Portland Cement Concrete Class C. Spillway shall have side slopes at the ends not to exceed a slope of 3 horizontal to 1 vertical.

Spillways for basins shall be designed as a street straight-crested weir with the maximum depth of flow over the weir not to exceed 4 inches.

Easements for landscaping purposes will be granted to individuals, corporations, or homeowner associations to screen and obscure an open retention/detention basin. A landscaping plan must be presented to the City for review and approval before landscaping work commences. The easement must contain provisions for maintenance of the landscaping by the party to whom the easement will be granted.

Detention basins shall be seeded and all slopes stabilized in their entirety including all disturbed areas within the tract to be dedicated to the City. Retention basins shall be seeded and all slopes stabilized except for those areas which are calculated and designed as percolation areas.

2320. Pavement:

- a. Local street cul-de-sac and local street minor Access Street - 23 inches minimum Class "B" asphalt concrete, unless the local street is a bus (school or transit) route, in which case the minimum shall be increased to 3 inches.
- b. Local street feeder, industrial parks, and all arterials Arterial Streets - pavement structure design and City approval required and approval from the City.

2421. Pedestrian Path: Location, design, and construction shall be as approved by the City.

2522. Percolation Systems: See detail in Section 12.03.080 E.

Standard placement of the perforated pipe in the percolation system shall be 18 feet from centerline of the street to centerline of the perforated pipe. A storm drain pipe for the percolation system shall not be installed under the paved streetway surface or in fill material. The maximum trench width shall be 5 feet.

When the perforated pipe system is installed in sandy soils (more than 30% of native material passing #4 sieve) the trench shall be surrounded with filter fabric and installed as per the manufacturer's installation recommendations.

Continuous perforated pipe systems shall not exceed 150 feet in length from a structure. A Type 1 catch basin with solid cover shall be installed at intermediate locations as necessary and at the end of each system.

Percolation trenches shall be a maximum of 5 feet wide and 4 feet deep.

2623. Pipe: All storm drain pipe, except as otherwise provided for in these standards, shall be minimum 12-inch diameter rubber-gasketed concrete pipe or double-walled, corrugated, polyethylene pipe, with a smooth internal diameter (AASHTO M-294 Type - S) ADS N-12 plastic pipe (twelve (12) inch to twenty-four (24) diameter only) or approved equal, coupled with a company produced PVC coupling or approved equal, except for perforated pipe and principal underground detention facilities. ADS N-12 pipe shall have a minimum cover of two (2) foot cover feet measured from the top of pipe to the top of paved surface. The rubber-gasket requirement may be waived by the City if it can be shown that joint leakage will not be detrimental to the street prism.

All pipe shall be located under the pavement flow line or lie outside of the pavement. The exceptions will be for perpendicular crossings and cul-de-sacs.

The maximum velocity in the pipe system is 15 feet per second.

When extreme slope conditions or other unusual topographic conditions exist and subject to approval by the City, other pipe materials and methods, such as, but not limited to, plastic or ductile iron pipe may be used.

Storm drain gradients shall be such as to assure minimum flow velocity of 2 feet per second when flowing full.

Debris and access barriers shall be required at the inlets and outlets of all culverts larger than 18 inches unless waived by the City.

Eight-inch diameter plain concrete storm sewer pipe may be used for cross street connections from a concrete inlet to a Type 1 or 2 catch basin.

Downsizing of downstream culverts within a closed system with culverts 18 inches in diameter and smaller will not be permitted.

Pipes connecting into a structure shall match crown elevations.

2724. Retaining Rock Walls: See detail in Section 12.03.080 T.

Rock retaining walls may be used for the containment of cut slopes or fill embankments up to a maximum height as shown in the chart below.

ROCK WALL SECTION

MAXIMUM HEIGHT

Fill Section

8 Feet

Cut Section With Loosely Compacted Soils 8 Feet

Cut Section With Hardpan Soil Conditions 8 Feet

For heights over 8 feet or when soil is unstable, a structural wall of acceptable design shall be used and calculations shall be submitted to the City for approval. A soils investigation and report by a geotechnical engineer may be required by the City if soils conditions are questionable.

The rock material shall be as nearly rectangular as possible. No stone shall be used which does not extend through the wall. The rock material shall be hard, sound, durable, and free from weathered portions, seams, cracks, and other defects. The rock density shall be a minimum of 160 pounds per cubic foot.

Rock selection and placement shall be such that there will be minimum voids and, in the exposed face of the wall, no open voids over 6 inches across in any direction. The final course shall have a continuous appearance and be placed to minimize erosion of the backfill material. The larger rocks shall be placed at the base of the rockery so that the wall will be stable and have a stable appearance. The rocks shall be placed in a manner such that the longitudinal axis of the rock shall be at right angles or perpendicular to the rockery face. The rocks shall have all inclining faces sloping to the back of the rockery. Each course of rocks shall be seated as tightly and evenly as possible on the course beneath.

Backfill shall be placed to a twelve-inch minimum thickness between the entire wall and the cut or fill material. A minimum thickness of six (6) inches of quarry spall shall be placed behind the rockery face to minimize the potential of erosion of gravel backfill material. The backfill material shall be placed in lifts to an elevation approximately 6 inches below the top of each course of rocks as they are placed, until the uppermost course is placed. Any backfill material on the bearing surface of a rock course shall be removed before setting the next course.

A 6-inch perforated drain pipe shall be installed behind the first course of rock and laid on original ground. Positive drainage for the perforated drain pipe shall be provided.

For rock walls in fill sections all fill material placed beyond the backfill shall be placed and compacted in a maximum of 6-inch compacted lifts.

A concrete wall cap will be required on all rock walls.

A chain link fence may be required at the top of the rock wall. Type of fence and location will be determined by the City.

2825. Riprapping and Energy Dissipation: All drainage structures and pipes shall be provided with sufficient riprapping and/or energy dissipation to prevent scour or erosion at all pipe inlets or outlets.

Riprapping at pipe outlets shall be provided in all situations. Rock size shall be sufficient to provide the necessary energy dissipation to prevent erosion. The size of the riprap pad shall be as follows for the various pipe diameters:

<u>Pipe Diameter</u>	<u>Riprap Width</u>	<u>Pad Size Length</u>	<u>Depth</u>
12@	36@	48@	12@
15@-18@	48@	60@	18@
24@-30@	48@	72@	24@

Riprapping or headwalls at pipe inlets shall be provided when required by the City. Erosion at the pipe inlet, hydraulic efficiency, and traffic safety shall be the criteria used to determine the necessity for inlet riprapping or headwalls.

29. Shoulder:
 - a. Gravel shoulder: See detail in Section 12.03.080 N.
 - b. Asphalt concrete shoulder: See detail in Section 12.03.080 N.

3026. Sidewalks: See detail in Section 12.03.080 Q. All organic matter shall be removed and the subgrade compacted under the sidewalk as required by the City.

After the removal of the forms, the sidewalk shall be backfilled and the right-of-way restored to the satisfaction of the City.

Ramp centerline shall be perpendicular to or radial to curb returns unless otherwise approved by engineer. All curb ramps shall conform to ADA requirements.

- When ramps are constructed on one side of a street, ramps shall be constructed at corresponding sidewalk locations on opposite sides of the street.

On arterial streets, in general case, curb ramps shall be constructed two per radius, in or preferably adjacent to the main pedestrian paths.

On residential streets and/or when utilities are in conflict or street grade exceeds 4.0%, curb ramps may be constructed one per radius, at midpoint of curb return or at main pedestrian path.

3127. Slopes: Side slopes shall be constructed no steeper than 1-1/2 to 1 on fill slopes and 1 to 1 on cut slopes. Flatter slopes are preferred and may be required by the City if there are indications that the earth is unstable and subject to sliding, sloughing, or erosion.

Side slopes shall be stabilized by grass sod, hydro-seeding, by other planting, or surfacing materials, or by the use of other material types acceptable to the City.

Side slopes may also have to be flattened to accommodate utility placement. Placement outside of their standard location as per other adopted standards due to steep side slopes shall not be permitted.

Side slopes higher than 15 feet shall be terraced. Terrace widths shall be a minimum of five (5) feet.

3228. Stop Signs: See detail in Section 12.03.080 AA. Stop signs shall be installed at locations determined by the City as soon as the street under construction is opened to vehicular use.

Placement of stop signs in City right-of-way shall be by City general permit or in accordance with approved street construction plans only.

3329. Street Name Signs: See detail in Section 12.03.080 Z.

3430. Street Lighting: Street lighting is allowed within the City rights-of-way. Street lighting shall be required on all collector and arterial streets, and at intersections of local street feeder streets with any other local street feeder or higher classification of street all interior streets of a subdivision and on all street frontages abutting a proposed development. Street lighting design shall conform to current IES Standards.

3531. Striping, Buttoning, and Delineation: See detail in Section 12.03.080 DD.

a. When required by the City, streetway striping, buttoning or other traffic delineators shall be installed in accordance with the approved plans and the M.U.T.C.D., and the detail sheet found in the Section 12.03.080 DD. titled "Pavement Marking Details."

b. Before any pavement marking work takes place, the Applicant shall contact the City Traffic Operations Center notify the City. An on-site meeting may be required to review the work and method of construction.

c. The City may choose to do all striping, buttoning, and delineation work and charge the Applicant for actual costs incurred by the City when said work does not exceed \$5,000.00. Reimbursement to the City shall be made before the City accepts the overall project for dedication or maintenance and before the City releases any of the Applicant's financial guarantee. The City will indicate on the approved street construction plans whether the City will do the work and charge the Applicant or require the Applicant to do the work.

If the City elects to do the work, the Applicant will be required to submit a financial guarantee to the City in an amount established by the City before the striping work is commenced.

3632. Survey Monuments: See detail in Section 12.03.080 CC.

All existing survey control monuments which are disturbed, lost, or destroyed during surveying or construction shall be replaced by a licensed land surveyor.

Survey control monuments shall be placed by a licensed land surveyor as shown on the approved construction plans in accordance with recognized good practice in land surveying, and in conformance with the approved details for survey monuments.

Survey monuments shall be required at all intersections, P.C.s, P.T.s, centers of cul-de-sacs, and other appropriate locations as determined necessary by the City. Monuments at P.C.s and P.T.s may be eliminated and replaced with a monument at the P.I., if the P.I. falls within the paved streetway surface.

For formal recorded documents containing a surveyor's certificate, monumentation, and staking shall be placed in accordance with the certificate and the Survey Recording Act by the responsible surveyor.

3733. Tracts: Storm drainage facilities lying outside of the right-of-way must be in tracts dedicated to the City. The facilities within the tract shall not be located closer than 5 feet from a property line. Tracts shall be a minimum of 15 feet in width. Tract widths in excess of 15 feet may be required for pipe sizes in excess of 36 inches or depths greater than 10 feet.

3834. Traffic Control: All traffic control and traffic control devices shall be as specified in the latest edition of the M.U.T.C.D. If required by the City, the engineer shall submit temporary traffic control plans for review and approval. The Applicant shall implement the approved plan, when necessary, until the project is given final approval by the City.

During the progress of the work, barriers and warning signs shall be erected and maintained as necessary, and in accordance with the MUTCD or as directed by the City for the protection of the traveling public. The barriers shall be properly lighted when necessary.

3935. Transit Facilities: See detail in Section 12.03.080 M.

4036. Utilities: It will be the Applicant or engineer's responsibility to contact all utilities to see that the utilities are located in accordance with these or other adopted standards and that the installation work is coordinated with the street construction work.

Improper location or construction of utilities will be sufficient reason for the refusal of the City to accept a street for dedication and maintenance.

Utilities to be located within existing but unconstructed unimproved City rights-of-way and streets which are proposed for dedication to the City shall be constructed in accordance with current franchise procedures and in compliance with these Standards.

As a matter of policy, utility trenching or transverse cuts in new City streets will be discouraged. They will not be permitted unless it can be shown that alternatives such as boring or jacking or relocating outside the paved streetway area is not feasible unless the utility can be installed just prior to reconstruction or overlay of the street.

All underground installations shall be laid down as directed by the Engineer at a depth of not less than thirty-six inches below the surface of the ground along and under City streets and highways, and in such a manner as not to interfere with the construction of sewers, drains and other underground utilities, nor with the grading of public highways; provided, that in the unpaved shoulder area only, installation shall be permitted at a depth of thirty inches so long as there remains a twelve-inch undisturbed buffer zone adjacent to the utility trench between the trench and the inner and outer edges of the unpaved shoulder.

All underground utility vaults shall be placed with one edge of the vault at or outside of the right-of-way line such that no portion of the vault is closer than two feet from any paved surface (shoulder and/or traveled way). All underground utility vaults (except electrical vaults) with a maximum width of seven feet zero inches and a maximum length of twelve feet zero inches shall have a minimum cover of not less than thirty-six inches when the longest side is placed adjacent to the edge of the right-of-way. All underground utility vaults (except electrical vaults) with a maximum width of more than seven feet zero inches and/or length of more than twelve feet zero inches shall have a minimum cover of not less than forty-eight inches. There shall be no minimum cover requirement for electrical vaults, however, no portion of the vault shall protrude above the surface grade elevation. The upper-most elevation of the electrical vault may be flush with the surface ground elevation at the installation point.

A variance may be granted upon such conditions and terms as the Engineering Manager determines are necessary which

shall include but not be limited to agreement to remove the utility vault at such time as the Engineering Manager determines street improvements are necessary.

Utility patches shall be per the detail in the Section 12.03.080 U.

Pole utilities and underground utilities, including service crossings, shall be installed or relocated prior to the start of street construction if planned street cuts and fills are minimal and location of street elements can be clearly indicated in advance. Otherwise such utilities, with connections, shall be installed or relocated after the subgrade has been completed but before surfacing has been placed.

4137. Widening and Overlaying of Existing Facilities: See detail in Section 12.03.080 BB.

Lanes and shoulder widths shall be constructed to full width throughout the entire length of the project.

Storm drainage control and improvements may be required as the result of the additional widening that would be done. The increased runoff generated by the improvement work must be satisfactorily controlled as per storm drainage design guidelines of the City.

42. Widening and Overlaying of Existing Facilities: See detail in Section 12.03.080 BB.

Lane and shoulder widths shall be constructed to full width throughout the entire length of the project.

Storm drainage control and improvements may be required as the result of the additional widening that would be done. The increased runoff generated by the improvement work must be satisfactorily controlled as per storm drainage design guidelines of the City.

C. Construction, Inspection and Plan Revisions.

1. Construction

a. Work performed in the construction or improvement of streets in existing City right-of-way or proposed City streets shall be done in accordance with approved plans and these standards.

2. Street Inspections.

a. On all street construction, inspections will be done by the City or its designated inspectors. Unless otherwise instructed by the City, inspections will be made as follows:

(1) Inspection No. 1: Clearing and grubbing, embankment and excavation, underground drainage, at that state where trenching and placing of pipe are complete but prior to cover or temporary water detention /retention and siltation control in accordance with the approved plans.

(2) Inspection No. 2: General streetway, at that state where the drainage system, underground utilities, and streetway grading to suitable subgrade are complete, including gravel ballast if required.

(3) Inspection No. 3: General streetway, at that state where the crushed gravel surfacing has been placed.

(4) Inspection No. 4: General streetway, while the paving is in progress.

(5) Inspection No. 5: Overall streetway, after paving, cleaning of drainage system and all necessary clean-up, striping, buttoning, monumentation, and all streetway delineation work.

3. Applicant Required to Notify. The City shall be notified 48 hours in advance of each required inspection. Failure to comply may necessitate appropriate testing and certification by a certified testing laboratory. At the time that such action is directed by the City, no further work will be permitted on the project until all tests have been completed and all corrections have been made to the satisfaction of the City.

4. Construction Staking. Construction staking shall be done by or under the supervision of a licensed surveyor or engineer for all the necessary construction work. If required by the City, the surveyor or engineer shall provide documentation, stamped and signed, verifying the correctness of the proposed work as to grade and/or alignment.

5. Materials Acceptance.

a. If adequate inspection is not called for before completion of the streetway construction, it may be necessary for core drilling and testing to be performed to assure acceptable streetway quality.

b. It shall be the Applicant's responsibility to provide the City with a materials acceptance list for all materials used on the project when required by the City. The materials acceptance list shall confirm by supplier's verification, materials testing reports or reports stamped and signed by a professional engineer that the particular item(s) meet City and/or State specifications.

c. Substitution of existing material for Gravel Base Class "B," Crushed Ballast, the City may require a report from a

materials testing laboratory verifying the quality of the material.

d. All reports, materials verifications, or other documents submitted to the City for acceptance shall be stamped and signed by an Engineer.

D. Financial Guarantees.

1. Maintenance Guarantees.

a. The City shall require a bond or other financial surety acceptable to the City to guarantee that the Applicant will correct any defect or subsequent problem in a dedicated improvement, including the satisfactory functioning of the project's drainage and/or drywell system caused by improper design, faulty construction, poor housing construction practices, or other reasons determined by the City. The guarantee shall not exceed 7.5% of the construction cost of the project as determined by the City. The guarantee shall remain in effect for a period of 18 months from the time that the City accepts the street and/or storm drainage system for maintenance. The Applicant shall remain financially responsible for any and all costs exceeding the amount of the original financial guarantee.

b. The guarantee shall be submitted to the City before the improvements are dedicated to the City or, if applicable, before the posted construction bond is released back to the Applicant at the Applicant's option.

2. Construction Guarantees.

a. A financial guarantee may be submitted to the City in lieu of construction of the required improvements except in situations where the required work involves a safety or public welfare issue. Project approval shall not be granted until all required safety and public welfare issues are completed to the satisfaction of the City.

(1) An engineer's estimate shall be submitted to the City by the engineer detailing the quantity of work to be done in the City right-of-way. The estimate shall be based on current construction costs and shall be stamped and signed by the engineer. An executed contract for the total project between a licensed, bonded contractor and the project Applicant may be substituted in lieu of the engineer's estimate.

(2) The City shall review the engineer's estimate or the executed contract, and if it is in order, the City will establish the amount of the financial guarantee. The financial guarantee shall be 125% ~~150%~~ of the engineer's estimate or of the executed contract to allow for inflation and engineering administration expenses should the City have to complete the project.

b. The applicant will be allowed a 2-year time period from the acceptance of the financial guarantee in which to complete the work after which the financial guarantee is subject to default to the City who will complete the work and use the guarantee for reimbursement. The Applicant shall remain financially responsible for any and all costs exceeding the amount of the original financial guarantee.

c. Final approval of the street construction plans will not be given or a construction permit issued until a financial guarantee is submitted in the amount necessary when so required by the City.

E. Submittal Standards.

1. Submittal Procedure. Plans for proposed street construction shall be submitted to the City with a transmittal letter.

a. For proposed street and drainage construction by a developer, complete street plans and profile, together with drainage calculations, supporting topography mapping, contributing areas, etc., and shall be signed, stamped and submitted by the Applicant's engineer to the City for review.

b. Review fees, if applicable, shall be paid by the Applicant concurrently with the plan submittals.

c. Plans shall be reviewed by the City according to the date they were submitted. Previously approved plans submitted to the City for a revisions shall be considered a new submittal. Approved plans under construction will be considered a resubmittal and will be reviewed prior to new submittals.

2. Time Limitation of Approval. The approval of street construction plans shall be valid for a time period of two (2) years from the date of approval by the City. Plans not implemented within this time period shall be submitted to the City for review and any revisions or modifications necessary to meet the current Standards shall be made before the plans are approved by the City.

3. Revisions to Approved Plans.

a. The City may require that plan changes or field revisions to the approved construction plans be done using a change order form which is available at the City Engineer's Office. When the change order form is required, the revisions procedure as outlined on the form must be followed or final approval of the project may be withheld by the City.

b. When the City has authorized revisions to the approved construction plans, the City may require the engineer to shall submit to the City "as-built" construction plans, stamped and signed, reflecting the approved revisions.

4. Design Plan Standards.

a. Plan-profile sheets and plan sheets shall use a sheet size of 24" x 36" or 22" x 34". Original sheets shall be mylar,

tracing paper, or equal.

- b. First submittal: Two (2) sets of prints of street plans, profiles, and detail sheets, including two (2) sets of prints or drainage area plans and drainage calculations. When required, the erosion and sedimentation control plans shall be submitted at this time.
 - c. Final submittal: Original and one (1) set of prints of corrected street plans, profiles, detail sheets, drainage plans and calculations, and erosion and sedimentation control plans, when required by the City Engineer; quantity take-off and engineer's cost estimate of proposed construction when the project is to be bonded; together with the most recent approved review set previously marked up by the City reviewers. Upon the City's approval of the final submittal, the City will make in-house prints and a reproducible set and return the original set to the engineer. The City will retain this reproducible set utilizing it to make copies for public inspection and distribution as required.
 - d. All submitted work shall be stamped, signed, and dated by a licensed, professional engineer before review by the City.
 - e. All lettering shall be greater than one-eighth (1/8) of an inch high.
5. Cover Sheet.
- a. Street construction plans submitted to the City for review and approval for streets in a proposed formal plat, short plat, large lot division, or work in existing City right-of-way or other projects which have a total street length in excess of 1,200 feet shall have a plan cover sheet.
 - b. The plan cover sheet shall be sheet 1 of the street construction plans and shall contain the following information:
 - (1) An overall site plan drawn to an appropriate scale; such as, 1" = 100', 1" = 200', or 1" = 400' showing the entire development and street system network including its connection to an existing City street or State highway.
 - (2) The project's storm sewer system along with easements, tracts, drainage facilities, all buffer and screening areas, off-site and on-site natural drainage courses or areas shall be shown on the overall site plan.
 - (3) Soil logs and soil log locations when an on-site storm drainage percolation system is proposed.
 - (4) A simple vicinity map down to a scale of 4" = 1 mile or other similar scale, with the north area pointed in the same direction as the cover sheet north arrow, showing project site, existing public street system and any other pertinent information.
 - (5) Standard notes which are applicable to the project.
 - (6) The Applicant's and the Applicant's engineer's name, address, and telephone number.
 - (7) Field topographic information including contour lines of the property in its natural undeveloped condition. City or U.S.G.S. topographic mapping must be field verified and supplemented with additional field topographic information when necessary to provide an accurate depiction of the property. Field topographic information submitted for the project's storm drainage plan does not have to be duplicated on the street construction plans. A 5-foot contour interval shall be used except when the property is extremely flat or undulating and the cross slope varies or when pothole areas, wetlands, swales, or drainage courses exist on the property, then a topographic map with contour intervals of 2 feet will be required.
 - (8) When more than three (3) sheets are used, a table of contents shall be shown.
 - c. At the engineer's option, the information shown on the cover sheet may be shown on additional sheets.
6. Horizontal Plan. Horizontal plan elements shall include the following in addition to those items required on the cover sheet when a cover sheet is not required.
- a. Street alignments with 100-foot stationing, preferably increasing to the north or east and reading from left to right, and stationing at points of curve, tangent, and intersection, with ties to section or quarter corners or other established and monumented survey control points at the intersection of the proposed street or streets and the existing City street or State highway. All lettering shall be right reading.
 - b. Section, Township, and Range on each page, plat, or project name.
 - c. Bearings on street centerline.
 - d. Curve data including radius, delta, and arc length on for all horizontal lines alignments.
 - e. Right-of-way lines and width for proposed street and intersecting streets. The plans shall show properly dimensioned lot lines and lot numbers to properly locate and dimension all tract and easement areas. Lot lines and lot numbers are requested to expedite plan review but are not required.
 - f. All topographic features within right-of-way limits and sufficient area beyond to resolve questions of setback, slope, drainage, access onto abutting property, and street continuations. This shall include, but is not limited to, ditch flow lines, all drainage structures with invert elevations, utility locations, fences, structures, existing curbing and approaches, pertinent trees and shrubbery, and other appurtenances which would affect the construction of the project.
 - g. Identification of all existing City streets and adjoining subdivisions when it is pertinent to the scope of the project.
 - h. Typical streetway cross-section(s) of proposed street.
 - i. Existing and proposed drainage features, indicating direction of flow, size, and kind of each drainage channel, pipe, and structure. The status of existing drainage structures must be clarified as either "existing-retain," "existing-abandon," or "existing-remove."

- j. Scale: 1" = 50'. However, 1" = 100' shall be optional for development of lots one (1) acre or larger. Details for clarification may be shown on a convenient scale, normally 1" = 10' or 1" = 20'.
 - k. North arrow shall point to the top, left or to the right side of the sheet.
 - l. The limits of clearing, filling, and excavation
7. Profile Elements. Profile elements shall include the following:
- a. Original ground line at 100-foot stations and at significant ground breaks and topographic features, with accuracy to within 0.2 feet on unpaved surface and 0.02 feet on paved surface.
 - b. Final street and storm drain profile with stationing the same as the horizontal plan, preferably reading from left to right, to show stationing of points of curve, tangent, and intersection of vertical curves, with elevations to 0.01 feet for each street in the project.
 - c. Street grade and vertical curve data; street to be measured at centerline.
 - d. Datum and all bench mark information must use established U.S.C. & G.S. control or City bench marks when there is an existing bench mark within one-half (2) mile of the project.
 - e. Vertical scale 1" = 5'. Clarifying details may be done to a convenient scale. Use 1" = 10' for vertical scale when horizontal plans are at 1" = 100'.
 - f. When streets end at a property line, the existing ground profile shall be continued a minimum of 200 feet to show that the proposed vertical alignment is reasonable.
 - g. When intersecting profile grades have a difference of 1% or less, a vertical curve is not required. All other vertical grade inter-sections will require a minimum 50-foot vertical curve.
8. Detail Sheets.
- a. All applicable standard details.
 - b. Two cross sections of each retention/detention pond showing original ground, property lines, slope catch points, and all other pertinent information to adequately construct the pond.
 - c. Right-of-way cross sections as required by the City.
 - d. Construction recommendations from a soils report.
9. Temporary Erosion and Sedimentation Control Plan.
- a. Construction sequence.
 - b. Applicable standard details.
 - c. Erosion control notes.
 - d. Limits of clearing, filling, and excavation.
 - e. Proposed haul routes.
 - f. Access locations.
10. Specifications. When required by the City, standard specifications and general provisions must be submitted with the street construction plans.
- F. Administration.
1. Requirements for Working in City Right-of-Way.
- a. Construction plans must be approved showing the limits and all details of the proposed work and a bond or other financial guarantee and liability insurance acceptable to the City has been submitted to cover all proposed work and a permit has been obtained from the City. A construction permit shall be obtained by the Applicant before work commences in City right-of-way.
 - b. Liability insurance in the form and amount determined necessary by the City shall be obtained by the Applicant or his contractor before work commences in City right-of-way. Proof of proper insurance coverage shall be provided to the City upon request. Specific information, forms, etc., can be obtained from the City Engineer's Office.
 - c. An environmental checklist shall be submitted to the City Environmental Official for the work shown on the street and/or storm drainage construction plans submitted to the City for review and approval unless the proposed work is part of a project for which an environmental checklist has already been submitted. A declaration of non-significant impact or a final environmental impact statement must be issued and the appeal period expired before the project plans are given final approval by the City.
 - d. Street and/or storm drainage construction plans which are part of a larger project and require a Hearing Examiner decision or any other governmental approval will not be granted final approval until the Examiner's decision and conditions or other necessary governmental approval are final and the appeal period has expired.
2. Street Acceptance Procedure.
- a. The City has no obligation to accept any private street into the City's street system for dedication or maintenance. It

shall be the Applicant's responsibility to submit a preliminary site plan showing the street(s) proposed for dedication to the City and must receive the City's written approval before proceeding with street construction plans.

- b. Street construction plans done in accordance with these Standards shall be submitted for review and must be approved by the City before street construction activity commences.
- c. All construction work must be completed to City standards and/or financial guarantee(s) submitted to the City in the form and amount as required by these Standards before The City will accept the street for dedication and maintenance.
- d. The Applicant must submit all necessary deeds, easements, etc., to the City for acceptance and recording by the Pierce County Auditor's Office.
- e. Once the street has been dedicated to the City and accepted for maintenance, the street shall remain open for public use and may not be closed except by the City, as provided by RCW 47.48.010, 47.48.020, and 47.48.031.

3. Standard Forms.

a. Standard forms have been developed by the City and have been reviewed by certain offices such as the City Attorney's Office and the City Manager's Office. The use of these forms expedites the processing of the project and also assures the City that all applicable legal requirements are being met. The most recent version of each form shall be used.

b. One of the following forms for financial guarantees shall be used when making a submittal to the City:

- (1) Performance Bond
- (2) Bond to Insure Correction of Defective Improvements
- (3) Assignment of Funds

Irrevocable Letters of credit or other types of financial guarantees may be approved if acceptable to the City Attorney's Office and City Manager's Office.

All financial guarantees shall run continuously until released by the City and will not have an expiration or cancellation date on them.

c. The following deeds and easements should be used to convey property or rights to the City:

- (1) Quit Claim Deed (Individual, Partnership, or Corporate) - By signing this document, the Grantor(s) quit any claim they have to the property described in the Quit Claim Deed.
- (2) Storm Sewer Easement - This document conveys to The City the right to have and maintain a storm sewer system across a specific parcel of property.
- (3) Slope and Utility Easement - This document conveys the right to have fill material or a cut slope and utilities on private property.

d. The following permit forms are available from the City:

Permit (General) - This permit is to be used any time work is being done in City right-of-way. The permit is to be completed and approved by the City before work commences. A financial guarantee may be required before the permit is issued.

The City reserves the right to require complete construction plans that comply with these Standards for the proposed work before issuance of a permit.

4. Variances. Variances from Geometric Design Criteria may be granted upon evidence that such variances are in the public interest, that they are based upon sound engineering judgment, and that requirements for safety, function, appearance, and maintainability are fully met. Desired variances must be approved prior to construction. A variance to this ordinance shall be authorized only by the City Engineer upon submittal of additional information, plans, and/or design data by a professional engineer retained by the Applicant showing that the requested variance is safe and can be economically maintained by City forces.

For variances other than from Geometric Design Criteria, the City Hearing Examiner shall have the authority to grant a variance from the provisions of this Chapter, when, in the opinion of the City Hearing Examiner, the conditions as set forth in 03.100.4.a Section 12.03.060.4.a below have been found to exist. In such cases a variance may be granted which is in harmony with the general purpose and intent of this Chapter so that the spirit of this Chapter shall be observed, public safety and welfare secured, and substantial justice done.

Prior to the public hearing on any proposed variance, the Hearing Examiner shall notify the fire district in which the variance is located of the hearing and request comments and concerns that the fire district may have about the variance.

a. Required Showings for a Variance. Before any variance may be granted, it shall be shown:

- (1) That there are special circumstances applicable to the subject property such as shape, topography, location, or surroundings that do not apply generally to the other property in the same vicinity;
- (2) That such variance is necessary for the preservation and enjoyment of a substantial property right possessed by other property in the same vicinity but which because of special circumstances is denied to the property in question;
- (3) That the granting of such variance will not be materially detrimental to the public welfare or injurious to the property or improvement in such vicinity in which the subject property is located;
- (4) That such variance is based on sound engineering judgment, and that requirements for safety, function, and maintainability are fully met. The City may grant a variance to this Chapter only upon submittal of additional information, plans and/or design data by an engineer showing that the requested variance is safe, in the best interest of the public, and will not impose undue maintenance costs on City maintenance forces, if applicable.
 - b. The City Hearing Examiner May Impose Conditions on Variances. When granting a variance, the City Hearing Examiner shall determine that the circumstances do exist as required by Subsection 03.100.4.a Section 12.03.060.4.a of this Section Chapter, and attach specific conditions to the variance which will serve to accomplish the standards, criteria, and policies established by this Chapter.
5. Appeals. The Hearing Examiner=s decision shall be final and shall only be appealable to Superior Court in accordance with the provisions of City of Lakewood Ordinance No. 95-13 Any person aggrieved by any Administrative decision of the City under this Chapter may appeal to the City Hearing Examiner pursuant to the provisions of the City Appeals Ordinance, as now enacted or hereafter amended.
6. Severability. If any part of these Design Standards and Specifications, as established by ordinance, shall be found invalid, all other parts shall remain in effect.

76. Penalties.

- a. Failure to comply with these Standards will be cause for withholding or withdrawing approval of plans, forfeiture of bond or non-acceptance of the work by the City.
- b. Any person, firm, or corporation who fails to obtain the necessary permit(s) as required by this Chapter shall be deemed guilty of a misdemeanor, and such violation shall be punishable by a fine of \$250.00 for each offense and up to ninety (90) days in jail. Each person, firm, or corporation found guilty of a violation shall be deemed guilty of a separate offense for every day during any portion of which any violation of any provision of this Chapter is committed, continued, or permitted by such person, firm, or corporation and shall be punishable therefore as provided for in this Chapter. (Ord. 63 ' 1 (part), 1996.)

SECTION SEVEN: That Section 12.03.070 of the Lakewood Municipal Code, be, and the same hereby is, amended to read as follows:

12.03.070 References and Abbreviations.

A. Default Standards. When the "City Street Standards" do not address a design standard, the following documents will serve, in the order presented, as the street standards.

1. AASHTO
2. WSDOT
3. LAG
4. UAB
5. City and County Design Standards
6. Accepted engineering practice

B. Standards Adopted. The most recent editions of the following listed publications and manuals and any amendments, revisions, or supplements hereto are adopted for use on all street, bridge, and other construction projects administered by the Public Works Department:

1. State of Washington 1991 Standard Specifications for Street and Bridge Construction as published by the Washington State Department of Transportation and American Public Works Association No. M4-10;
2. Standard Plans for Street and Bridge Construction as published by the Washington State Department of Transportation No. M21-01;
3. Standard Specifications for Highway Bridges, Fourteenth Edition, 1989, as adopted by the American Association of State Highway and Transportation Officials, copyright 1989;
4. Interim Specifications - Bridges - 1990, as published by the American Association of State Highway and Transportation Officials, copyright 1990;
5. A Policy on Geometric Design of Highways and Streets, 1990, as published by the American Association of State Highway and Transportation Officials;

6. Hydraulics Manual as published by the Washington State Department of Transportation, 1989, No. M23-03;
7. Construction Manual, 1984, as published by the Washington State Department of Transportation under No. M41-01;
8. Local Agency Guidelines as published by Washington State Department of Transportation, No. M36-62;
9. Manual on Uniform Traffic Control Devices, 1985 Edition, published by the Federal Highway Administration, together with resolutions and modifications thereto for the State of Washington approved by the Washington State Department of Transportation.

C. Related City Documents. Every project should consult not only the Street Standards, but a number of other City documents. These documents are:

1. The Pierce County Transportation Plan, Policy Document, June 1990 (adopted by reference by the City Council on August 16?, 1995.
21. The City Site Development Regulations
32. Critical Areas and Natural Resource Lands
43. Washington State Environmental Policy Act (SEPA)
54. Subdivision Regulations

D. Abbreviations.

1. "AASHTO" -- American Association of State Highway Transportation Officials
2. "ADT" -- Average Daily Traffic
3. "APWA" -- American Public Works Association
4. "DHV" -- Design Hourly Volume
5. "D Max" -- Maximum Degree of Curvature
6. "GIS" -- Geographic Information System
7. "LAG" -- Local Agency Guidelines
8. "MUTCD" -- Manual on Uniform Traffic Control Devices
9. "P.C." -- Point of Curvature
10. "P.I." -- Point of Intersection
11. "P.T." -- Point of Tangency
12. "RCW" -- Revised Code of Washington
13. "R Min" -- Minimum Radius
14. "ROW" -- Right-of-Way
15. "SEPA" -- (Washington) State Environmental Policy Act
16. "TWLT" -- Two-Way Left-Turn Lane
17. "UAB" -- Urban Arterial Board
18. "USC & GS" -- United States Coast and Geodetic Survey
19. "USGS" -- United States Geodetic Survey
20. "vpd" -- Vehicles Per Day
21. "WSDOT" -- Washington State Department of Transportation
(Ord. 63 ' 1 (part), 1996.)

SECTION EIGHT: A. REVISIONS That the following listed Tables, Illustrations and Design Criteria and Cross Sections are revised as shown on the copies thereof on file in the office of the City Clerk, and incorporated by this reference as a part of Title 12 of the City Code:

TABLES	ILLUSTRATIONS	DESIGN CRITERIA and CROSS SECTIONS
Table 12.03-1	12-Illustrations-13	12-Design Criteria and Cross Sections-3
Table 12.03-4	12-Illustrations-14	12-Design Criteria and Cross Sections-7
Table 12.03-5	12-Illustrations-16	
Table 12.03-7	12-Illustrations-20	
12-Illustrations-21		
12-Illustrations-22		
12-Illustrations-24		
12-Illustrations-25		
12-Illustrations-28		

B. DELETIONS. That the following listed Tables, Illustrations and Design Criteria and Cross Sections on file in the office of the City Clerk and previously incorporated by reference as a part of Title 12 of the City Code, are hereby deleted therefrom:

TABLES	ILLUSTRATIONS	DESIGN CRITERIA and CROSS SECTIONS
Table 12.03-3	12-Illustrations-15	12-Design Criteria and Cross Sections-2

Table 12.03-6 12-Illustrations-19
Table 12.03-8 12-Illustrations-23
Table 12.03-9
Table 12.03-10
Table 12.03-11
Table 12.03-12

12-Design Criteria and Cross Sections-4
12-Design Criteria and Cross Sections-5

FIGURES

12.03B Conceptual Local Road System

SECTION NINE: That if any provision of this Ordinance or the application thereof to any person or circumstance is held to be invalid, the remainder of such code, ordinance or regulation or the application thereof to other person or circumstances shall not be affected.

SECTION TEN: That this Ordinance shall be in full force and effect five (5) days after publication of the Ordinance Summary.

ADOPTED by the City Council this 20th day of January, 1998.

CITY OF LAKEWOOD

Attest:

Bill Harrison, Mayor

Alice M. Bush, CMC, City Clerk

Approved as to Form:

Daniel B. Heid, City Attorney

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