City of Oakland

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Public Works Agency Standards

DRAFT

STREET DESIGN GUIDELINES

Engineering Design & ROW Management Division

Effective Date: July 2006

Revised July 2006

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I. INTRODUCTION

A. Purpose

The City of Oakland provides this design procedure manual to guide all consulting engineers submitting street improvement plans.

These procedures are intended to provide guidance in the design of new and/or reconstruction of existing public and private streets and roadways dedicated to the City of Oakland as well as to facilities located in private developments.

This guide is to be used in conjunction with City of Oakland Engineering Standards and Policies and the State of California Department of Transportation (Caltrans) Highway Design Manual. Section IX at the end of this design manual lists references to be used with this design manual.

This guide is not intended to be a substitute for any of the above-mentioned manuals or for the design and care of standard engineering practice, but to provide guidance from adopted standards and manuals for new and existing improvements.

The accuracy, sound design, and conformance with accepted engineering practice of all plans submitted to the City will remain the sale responsibility of the engineer-of-record.

B. Abbreviations

Caltrans	State of California Department of Transportation
CEDA	City of Oakland Community and Economic Development Agency
City	City of Oakland
DCSD	Design and Construction Services Department, City of Oakland Public Works Agency
PWA	City of Oakland Public Works Agency

II. GENERAL DESIGN STANDARDS

A. Requirements Per Development Conditions

1. All design projects shall be subject to review and approval by the Public Works Agency -Design & Construction Services Department (DCSD).
2. Where the requirements for any developments are not specified in these standards, such requirements will be specified by the Planning Commission

and/or City Council in the action approving or conditionally approving the development plan or, if not specified in such action, as required by DCSD.

3. Such requirements must conform to City Engineering Standards and Policies, City Ordinances, City development codes and local laws.
4. The design of street systems, including right-of-way and improvement widths, must provide the following:
   a. Adequate local service for the area being developed.
   b. Consistency with the City's General Plan Circulation Element, where applicable.
   c. Adequate capacity for all anticipated future area development.

B. Pre-Planning Meeting

1. Before the consultant engineer begins preparing project documents, the engineer shall arrange a pre-planning meeting with City staff. At this meeting City staff will discuss City requirements and the City review process.
2. The following issues may be discussed at this meeting:
   a. The consultant engineer will explain the proposed development with City representatives from Community and Economic Development Agency (CEDA), Real Estate Division, and the Public Works Agency -Design and Construction Services Department (DCSD).
   b. Project coordination by CEDA staff may be a requirement, depending upon the size and scale of the proposed development. CEDA project coordinators may attend the pre-planning meeting to explain the CEDA development process.
   c. Real Estate staff may be available to discuss the easement process whereby the developer cedes easements for public improvements (e.g. sanitary sewers, storm drains) that will be constructed on private property.
   d. DCSD engineers will discuss probable improvement requirements (e.g. street construction or enhancement, sanitary sewers and storm drains, etc.) both on private property and within the right of way. The following documents/software will be provided:
      (1) City-required format for the project plans (AutoCAD drawings that include title sheet, general notes, legend, abbreviations and selected standard details);
      (2) A Microsoft Word document of the most-recent City Special Provisions that modify the Standard Specifications for Public Works Construction (GREENBOOK), the City's reference specification for construction projects. *(As the Special Provisions are updated frequently, one week before submitting the final plans and specifications, the consultant engineer shall request an electronic update of these Special Provisions in order to incorporate all subsequent revisions.)*

C. Approval of Street Improvement Documents

1. The developer's engineer must prepare in accordance with engineering standards and submit to the DCSD for approval plans, profiles, and specifications for the proposed improvement of all public and private streets, easements, and drainage ways.
2. The developer's engineer must obtain the approval of the PW A -DCSD and the DCSD for plans, profiles, and specifications, and obtain necessary clearance and/or permits prior to commencing any construction.
3. The developer shall submit Subdivision Agreements for the construction or reconstruction of public improvements within the city right-of-way or public easement in conjunction with a parcel map or tract map conditions of approval.

D. Project Funding and Bonding Requirements

1. All improvements required by the conditions of approval or by the DCSD must be constructed and installed by the developer at the developer's expense, unless otherwise expressly specified and conveyed to the City upon final acceptance of the improvements by the City of Oakland.
2. A 100% Performance Improvement Bond and a 100% labor and materials Bond shall be submitted and posted for any public improvement(s) to be constructed within the City right-of-way or public easement. These bonds shall include any development fees required and approved by the City Council.

E. Street and Utility Design

1. The design of street systems including right-of-way and improvement widths must provide the following:
   (i) Adequate local service for the area being developed.
   (ii) Consistency with the City's General Plan Circulation Element where applicable.
   (iii) Adequate capacity for all anticipated future area development.

2. All utilities and infrastructure must be installed in accordance with applicable utility standards and state laws. All locations must be coordinated in the design phase with the PW A -DCSD and must be shown on all construction plans.
   (i) Approval of proposed sanitary sewer and storm drain systems by DCSD is required, as well as any ancillary conditions mandated for the development.
   (ii) Approval of proposed City electrical systems by the PW A Electrical Services Division is required, as well as any ancillary conditions mandated for the development.
   (iii) Approval of proposed City signal, signage and striping traffic systems by the PWA Traffic Engineering Division is required, as well as any ancillary conditions mandated for the development.

(iv) Approval of proposed City fire hydrants and ancillary systems by the Fire Department Engineer is required, as well as any ancillary conditions mandated for the development.
(v) Approval of proposed landscaping by the PWA is required, as well as any ancillary conditions mandated for the development.

F. Right-at-Way Dedications

1. Additional right-of-way dedication may be required per the City's General Circulation Element.
2. When additional right-of-way is required, a right-of-way sketch and legal description indicating dedication shall be shown and processed through a separate instrument. Once a dedication sketch and legal description has been approved and executed by the separate instrument, City Council will make a final approval of the dedication.
3. Property corner cut off for additional right-of-way for curb ramps may be required.

III. PROJECT DRAWING REQUIREMENTS

A. General Design Requirements

1. All drawings shall be done with black ink on standard size sheets (24"x36") with standard City title block.
2. All lettering shall be 1/8" or greater.
3. All plans shall be legible.
4. Final tract maps shall have consecutively numbered lots, even for phased developments.

B. Title Sheet Requirements

1. Consulting engineers should determine at the beginning of project design which City departments will have to approve/sign the final improvement plans. The cover sheet shall provide signature boxes for all the necessary City Departments that must approve final plans, e.g. PWA Maintenance Services, PWA Traffic Engineering, PWA Electrical Services, PWA Environmental Services, PWA Engineering, CEDA Planning and Zoning, Fire Department, PW A Tree Division, etc.
2. All title sheets shall have an index or key map clearly indicating the sheet numbers.
3. All index maps shall show the overall layout of water, sewer, storm drain, fire hydrants (within 500 feet) and street lighting system.
4. The project limits of work area shall be shown on the drawings.

C. Required Features for Every Design Sheet

1. Title Block
2. North arrow (where applicable)
3. Drawing Scale (where applicable)
   a. Horizontal 1"=20' (1"=40' for storm drain pipe on perimeter slopes)
   b. Vertical 1 "=8'
4. Legend (where applicable)
5. Consulting Engineers shall have a signature block on each sheet that lists the consultant's name, address, telephone number and email address. This block shall include the responsible Engineer's engineering seal, license number, expiration date and signature.
6. All subdivision maps shall show the subdivision number on each page.

D. General Notes Sheet

1. All applicable general notes shall be included. See Attachment A at the end of this manual.
2. The general notes and project specifications shall indicate if permits are required from other agencies, e.g. U.S. Fish & Game, U.S. Army Corps of Engineers, California Regional Water Quality Control Board, Bay Area Rapid Transit District, Caltrans, etc.
3. The general notes and project specifications shall indicate all required City permits, e.g. encroachment permit, building permit, tree removal or pruning permit, creek protection permit, etc.

E. Plan & Profile Requirements

1. All plan views shall show public utility easements.
2. Curb and gutter type per City standards shall be indicated on plans.
3. Right-of-Way line and Street dimensions shall be shown.
4. The street cross slope shall be indicated on the plans. The relative difference in elevation of the centerline and the top of curb shall be noted when they are not the same.
5. The plans shall show the radii of all street and sidewalk.

F. Profile View Requirements

1. All profiles shall show a profile line, plus profiles of the centerline and edges of pavement.
2. Curb grade plans and cross sections shall be shown at 25' intervals along road frontage and extending 50' beyond the limits of work.

IV. GEOMETRIC DESIGN

A. Street Classification Types

1. All street classifications shall conform to the latest adopted Element of the General Plan and any specific plan or as modified by DCSD and Fire Department. Street widths shall be in accordance with **Figures 1 through 9** of the Street Design Standards. Additional right-of-way may be required depending on existing and future traffic conditions, and the type and nature of development or access required.
2. The minimum surfacing width shall be 24 feet.
3. All surfacing, roadway widths and gates controlling emergency access routes shall be designed and constructed to the City's satisfaction.
4. Intersections of arterials may require special design depending on estimated traffic volumes. The use of single and double left turn pockets, free right turn islands, raised medians, larger curb radii may be required, based upon traffic studies and/or overall capacity and safety needs.
5. Where land abutting an existing substandard street or road is subdivided or developed in any other way, the following shall apply:
   a. The developer shall be required to dedicate any necessary right-of-way to conform to General Plan.
   b. The developer may be required to improve such streets to conform to General Plan Specifications and be applicable to City Standards and approved plans.
   c. In all developments including land divisions, the developer or owner may be required to dedicate any necessary additional right-of-way adjacent to or within the development.
6. Streets shall normally intersect at right angles. Any deviation from this requirement requires approval by the DCSD. An angle of intersection more than 15 degrees from a right angle shall not be allowed.
7. The minimum street centerline radius is 100 ft.
8. Minimum intersection tangent lengths (measured from the beginning of the curb return):
   a. Local collector streets = 50'
   b. Collectors, industrial and commercial roads = 100'
   c. Major roads and prime arterials require special design
9. Cul-de-sacs
   a. Shall not exceed 600 feet in length.
   b. Cul-de-sac design shall be in conformance with Figure 9.
   c. Minimum turnaround diameter = 70'
   d. When streets are temporarily dead-ended, a temporary cul-de-sac shall be constructed in conformance with City Standard.
10. Emergency access shall be provided to the City's satisfaction when the length of any single access route exceeds 600 feet.

11. The minimum width of a landscaped median island for a public street shall be six feet from curb to curb.

B. Horizontal Alignment

a. Horizontal alignment should provide for safe and continuous operation at a uniform design speed for substantial lengths of highway. (See Caltrans Section 203.1).
b. The designer shall use Table 203.2 of the Caltrans Highway Design Manual for minimum radius of curve for specific design speeds.
c. The minimum curve radius for curb transitions shall be 30 feet. When transitioning street width; use reverse curves of R=30' for width difference of 2' or greater, a curb transition with a ratio of 1:20 may be acceptable if approved by the Traffic Engineer. Larger radii may be required when truck turning is anticipated, as determined by the DCSD.
d. Every effort should be made to exceed minimum values, and such minimum radii should be used only when the cost or other adverse effects of realizing a higher standard are inconsistent with the benefits.

C. Vertical Alignment

1. Grades:
   a. Street Cross slope: 2% minimum, 5% maximum
   b. Cross slope where the profile grade is 1 % or less shall be 2% maximum.
   c. Grade breaks without vertical curves: 2%
   d. Vertical curves shall be used on curb return profiles
      i. Where the grade break exceed 1 %
      ii. When the drop is greater than two feet.
   e. Minimum longitudinal slope: S=0.005.
   f. Maximum street longitudinal slope: S=0.18
   g. Slopes steeper than 18% must be pre-approved by both the Fire Department and the Public Works Agency. Where approved by the Fire Department, grades 18% or greater shall not exceed 150 feet in length and will require grooved Portland cement concrete pavement (PCCP).
   h. On roads with slope greater than 6%, the designer shall flatten the cross- slope to 2% through intersections.

2. Maximum Cut and Fill Slopes.
   a. maximum cut slope: 1.5: 1
   b. max fill slope 2:1
   c. Steeper slopes require confirmation from a project-specific soils report.
3. Vertical Curves
   a. When a longitudinal grade break on centerline and curb lines exceeds 2%, a vertical curve is required.

b. Vertical curve data shall include tangent grades, stations and elevations for PIVC points, high points, and low points, plus the elevations of stations every 25 feet.
c. Minimum length of vertical curves shall be the greater of:
   (1) For streets classified as collector Street and above = 200 feet
   (2) For design speeds of 40 mph or more, the minimum length of the vertical curve should be 400 feet
   (3) Other Streets = 100 feet
   (4) Short cul-de-sacs and T intersections = the larger of
      - 40 feet, or
      - 1.2A V, (where A=algebraic grade difference in % and V= design speed in miles per hour)

4. Sight Distance
   a. The design engineer shall design for three types of sight distances: i.e. passing, stopping, and decision. These sight distances refer to the continuous length of roadway ahead visible to the driver. The Caltrans Highway Design Manual shall be used to determine the minimum required sight distances based upon the street design speed.
   b. Sight Distance Standards -Refer to Caltrans Table 201.1
   c. Passing Sight Distance -Refer to Caltrans Section 201.2
   d. Stopping Sight Distance -Refer to Section 201.3
   e. Grade Crest Requirements: Refer to Caltrans Section 201.4
   f. Grade Sags Requirements: Refer to Caltrans Section 201.5
   g. Horizontal Curves Requirements -Refer to Caltrans Section 201.6.
   h. Corner Sight Distance -Refer to Caltrans Section 405
   i. Corner sight distance design shall be performed for all public road intersections at unsignalized public road intersections. The design shall provide a substantially clear line of sight between the driver of a vehicle waiting at the cross road and the driver of an approaching vehicle in the right lane of the main highway.

5. Super-Elevations
   a. The use of super-elevations shall normally be avoided and require special approval. When necessary and approved by DCSD because of restricted geometries, the super-elevation design shall conform to the Caltrans design manual, with e_{max} =0.06. Special drainage design will be required whenever a super-elevation is used.
   b. Super-elevation standards are based on an e(max) selected by the designer based upon the roadway conditions, but not more than e_{max} = 0.06. Super-elevation rates from Caltrans table 202.2 shall be used within the given range of curve radii. (See Caltrans Section 202.2.)
   a. The super-elevation transition generally consists of the crown runoff, the super-elevation runoff, and the remaining 50-feet of the vertical curve as shown on figure 202.5. (See Caltrans Section 205.5.)

V. STRUCTURAL DESIGN SECTION

A. The structural section for pavement shall be designed based on a City- approved method.

B. The design life for structural pavement design shall be 25 years.

C. The minimum structural section shall be six inches AC over six inches of compacted Class II AB.

D. Design R-Values (Caltrans Section 604)

1. The "R" value shall be determined after rough grading and prior to paving. The structural section will then be determined by the use of the R-value and the traffic index (TI).

2. The R-values of project soils to be encountered on a project are shall be provided in the project Soils Report.

E. Design Traffic Index Values, TI

Street Classification	Traffic Index (TI)
Local Streets	5.0
Cul-de-sacs	5.0
Residential Streets	5.0
Commercial Streets	6.0
Minor Arterials	7.0
Major Arterials	Varies, to be determined by the City Traffic Engineer

The consultant shall submit the pavement design chart with TI values with the project improvement plans to the permit plan review.

VI. RIGHT OF WAY IMPROVEMENTS

A. Caltrans Encroachment Permits

1. Caltrans regulates access to State highways and freeways. It is the developer's responsibility to obtain the necessary Caltrans encroachment permits whenever construction within Caltrans' right-of-way is anticipated.
2. The Developer shall be responsible for all fees associated with encroachment permits.
3. The City will coordinate requests for new access and changes to the existing access with Caltrans.

B. Monuments

1. New Monuments

a. All new monuments shall have the license number of the surveyor or engineer setting the monuments clearly engraved thereon.

b. The boundary of all subdivision and parcel maps shall be tied to the California Coordinate System of 1983 (CCS-83), Zone 6 based on the North American Datum of 1983 (NAD-83) geodetic datum in at least two locations.

c. Grid distances, bearings and coordinates to two points on subdivision boundary shall be shown.

d. The basis of bearings shall be the California Coordinate System (NAD 83) as established by use of existing monuments, GPS surveys or astronomic observation.

2. Street Monuments

a. Centerline monuments shall be installed
- at the beginning of curve (BC), end of curve (EC) and point of intersection (PI) of all curves,
- at the centerline intersection of all streets and
- at the radius point of all cul-de-sacs.
- An offset may be used to avoid conflicts with existing utilities.

b. **All monuments shall be well monuments per City Standard Drawings.** Four tangent, lead and tack ties shall be set for each well monument. Centerline tie sheets shall be prepared by the surveyor or engineer and submitted to the City.

c. All existing surveying monuments that are destroyed during construction shall be reset either by City survey crews or by a person licensed to perform survey work in California at the developer's cost.

3. Boundary Monuments (Final maps)

a. The exterior boundary of the subdivision shall be monumented with permanent monuments not smaller than 2", iron pipes at least 24" long set at each corner at intermediate points along the boundary not more than 1,000' apart and at the beginning and end points of all curves; provided, if any exists at any such corner or point, such monument may be used in lieu of a new monument at the discretion of the DCSD.

b. Lot corner monuments: All lot corners except when coincident with exterior boundary corner(s) shall be monumented with permanent monuments of one of the following types:
(1) A 3/4" diameter iron pipe at least 18" long;
(2) A 1/2" diameter or square steel rod at least 12" long;
(3) Lead plug and copper identification disks set at an offset in concrete sidewalks or curbs.

C. Concrete Work -General

1. All concrete work shall be constructed in accordance with City's Standard Details S-1 through S-9. Where applicable, the City Standard Details shall be included on the project plans.

2. All concrete shall include one pound of lampblack per cubic yard of concrete.

D. Curbs and Gutters

1. Minimum curb return radius = 20 feet.
2. Rolled Curb is not permitted without pre-approval of the DCSD.
3. The top of curb elevation shall be taken at the back of curb.
4. Transition detail for Type "A" curb and gutter shall be shown on improvement plans. The transition length equals two feet per City Standard Detail S.1.
5. The maximum flow depth in public streets is 5".
6. A 6" curb face with 18" gutter shall be provided on both sides of all new streets. In special situations as determined by the DCSD, an 8" curb will be required to handle drainage.
7. Aggregate base shall be placed under all Portland cement concrete (PCC) gutters with a thickness equal to the total roadway structural section minus six inches. A six-inch minimum base section shall be placed under curbs and gutters, cross gutters and alley gutters.
8. Vertical curves shall be used on curb return profiles where the grade break exceeds 1 %.
9. A vertical Curve is required at a curb return when the drop is greater than 2 feet.
10. When joining curb and gutter where curbs are being constructed, transitioning from 6" curb to an 8" curb; the designer shall use a 7' length span per each 1" difference in curb height.

E. Sidewalks

1. Concrete sidewalks located contiguous with the curb shall be installed along both sides of all public streets. The DCSD may require alternate sidewalk locations in the development conditions for a particular project.
2. Sidewalks shall be constructed in accordance with City Standard Detail S-1.
3. The minimum clear width of sidewalk is five feet (measured from the face of curb.:
4. Minimum widths excluding top of curb:
    a. Standard sidewalk -five feet (no new utilities allowed in sidewalk).
    b. Commercial zone sidewalks -six feet (no new utilities allowed in sidewalk).
    c. Commercial Business Zone or commercial areas with sidewalk conflicts - 8 feet or full width of parkway.
    d. The DCSD may revise required sidewalk widths in order to match the widths of existing adjacent sidewalks.
5. The minimum thickness of sidewalk shall be 3 %".
6. The minimum thickness of sidewalk in driveway areas shall be 5 %".
7. Normal sidewalk cross slope shall be 2% (1/4inch per foot) towards the top of curb.

8. Minimum aggregate base depth of four inches under sidewalks shall be shown on project drawings. The minimum relative compaction of the sub-grade under sidewalks is 90%.
9. Any surface finish other than the standard broom finish must be approved by the DCSD.

F. Driveways

1. Concrete driveways shall be constructed in accordance with City Standard Detail S-2.
2. City Standard Detail S-2 shall be used to determine residential, commercial, and industrial driveway widths. Deviation from these standards requires approval from Driveway Appeals Board.
   a. Minimum driveway opening = 10 feet;
   b. Maximum residential driveway opening = 19 feet;
   c. Maximum multi-unit residential driveway opening = 30 feet;
   d. The minimum commercial driveway width is 25 feet.
3. The stations of driveway centerlines shall be indicated on the plans.
4. Driveway Slopes
   a. The maximum longitudinal driveway slope is 20% for a maximum length of 150 feet.
   b. Driveway slopes shall comply with City requirements.
   c. Driveway slopes shall be designed that cars do not bottom out.
   d. The maximum driveway cross slope in the sidewalk area shall be 2%.
5. The cross section of driveways shall indicate a minimum six-inch concrete depth over four inches aggregate base (minimum).
6. The driveway cross section shall state that the minimum relative compaction of sub-grade under driveways is 90%.
7. The plans shall show City of Oakland City Standard Detail S-2.

G. Curb Ramps

1. Two curb ramps shall be installed at each new corner, unless otherwise approved by the DCSD.
2. Curb ramps shall be installed in accordance with City Standard Details S-3 through S-8.
3. A corner property cut off for additional right-of-way may be required.

H. Retaining Walls

1. Retaining walls in the public right-of-way required for street stability shall be six feet maximum in height. The height shall be consistent with zoning regulations.
2. Retaining walls and all aboveground structures must be a minimum of five feet from the edge of pavement.
3. Retaining walls shall be constructed in accordance with the requirements of the Uniform Building Code.

4. It is the developer's responsibility to acquire all necessary building, zoning and encroachment permits for project retaining walls.

I. ADA / California Title 24 Requirements

1. All improvements must be designed in accordance with Americans with Disabilities Act (ADA) and California Title 24 regulations.
2. Fire hydrants, trees, tree wells, and streetlights shall be located so as to provide required ADA /Title 24 clearances.
3. Unless otherwise stipulated by ADA and California Title 24 Requirements, the center of streetlights, fire hydrants, and traffic signs shall be located 30" from the face of curb within the right-of way. At locations where no sidewalk is proposed, streetlights, fire hydrants, and traffic signs shall be located 30" behind the back of curb.

VII. TRAFFIC ENGINEERING REQUIREMENTS

A. Street Lights and Traffic Signals

1. Traffic and signal plans, if required, by the approval conditions for the development will be submitted to the Traffic Engineering for review and approval.
2. Streetlight spacing shall be shown on improvement plans.
3. Streetlights shall be less than 150 feet apart.
4. The plans shall indicate wattage and pole heights.
5. Electrical plans shall have a sign-off block for PWA Electrical Services.
6. Streetlights to be relocated shall be shown on the plans.
7. The separation distance between streetlights and street trees distance shall be 25 feet.

B. Signage

1. The developer must install all necessary traffic regulatory and warning signs specified by the City Traffic Engineer and PWA -DCSD as part of the street improvements.
2. Stop signs shall be provided on local Collector intersections and higher- classified streets, or where required by the Traffic Engineer.
3. The developer must install street name signs as part of the improvements. All street names must be approved by the Planning Department. Two street name signs on one post shall be provided at every intersection.
4. "No outlet" sign is required when the end of the street cannot be seen from the intersection.
5. "No Parking at Any Time" signs are required along street segments where parking is removed by development conditions or adjacent to existing no parking zones.
6. Advance warning signs, "Road Ends ------Feet" are required for temporary or permanent dead-end streets.

7. "One Way" and "Right Turn Only" or "Left Turn Only" signs are required on one-way streets and driveways as applicable.
8. "Keep Right" and "One Way" or other sign packages and "Right Turn Only" signs are required at driveways intersecting divided roadways.
9. The developer is responsible for relocating existing traffic control signs and replacing signs damaged during construction.

C. Striping

1. Traffic striping plans, if required, shall be submitted together with the street improvement plans. All striping shall be constructed in accordance with city and state standards and shall be approved by the City Traffic Engineer.
2. Striping and striping and striping removal plans stall are designed for all streets of Local Collector classification or higher or when striping exists on streets adjacent to new work.
3. The project striping plan shall include raised pavement markers.
4. All striping and signage plans shall be in accordance with Caltrans Standards and to the satisfaction of the City's Traffic Engineering division.

D. Construction Detour Plans

1. All construction detour plans shall incorporate requirements of the most recent versions of the Caltrans Highway Design Manual and the WATCH book.
2. Any detour plans for construction activities required by the Traffic Engineering shall be submitted and approved by the Traffic Division prior to issuance of the right of way construction permit.

E. Bikeways

1. Bikeways may be required.
2. Refer to the Transportation Engineering Design Manual.

F. Bus-Loading Facilities

1. Bus-loading facilities (such as bus bays, turnouts, and bus shelters) shall be reviewed by the City Traffic Engineer.
1. All proposed bus facilities shall also be approved by Alameda County Transit.
2. The bus pad design shall incorporate the AC Transit Detail, which shall be incorporated into the plans.

VIII. REFERENCES

The project plans and specifications shall be based upon the most recently adopted editions of the following, as applicable:

A. Oakland Municipal Code
B. Standard Specification for Public Works Construction (also known as the GREENBOOK)
C. City of Oakland Standard Details for Public Works Construction
D. State of California Department of Transportation (Caltrans) Highway Design Manual
E. Uniform Building Code
F. Fire Code.
G. WATCH Book