

DIVISION FOURSTANDARDS FOR TRAFFIC ENGINEERING

## CHAPTER 4.1

## TRAFFIC STUDIES

Sec. 4.1.1 Responsibility for Traffic Studies

Traffic studies may be required by the City in order to adequately assess the impacts of a development proposal on the existing and/or planned street system. The primary responsibility for assessing the traffic impacts associated with a proposed development shall be the developer's, with the City serving in a review capacity.

The following applications will require traffic studies prepared, in a format acceptable to the Traffic Engineering Division of the Public Works Department, unless waived by the Traffic Engineer:

- a. Any application which is located in an area where existing levels of service on area streets are "D", "E" or "F".
- b. Any application which is expected to intensify land use over that previously allowed in the General Plan whereby the increase in trip generation during any peak hour is expected to exceed 50 vehicles.
- c. Areas where special circumstances dictate the need for a traffic study.

Where access points are not defined at the time the traffic study is prepared, additional traffic work may be required when the access points are determined.

Transportation consultants are required to discuss projects with the Traffic Engineering Division prior to starting the study.

The traffic study shall be prepared by a licensed Traffic Engineer or Civil Engineer experienced in preparing traffic studies.

4.2.2.5 Appeals

Assessments imposed under the provisions of this resolution may be appealed by the developer in accordance with the provisions of section 17.53.060.I of the Municipal Code.

Sec. 4.2.3 Traffic Signal Fees4.2.3.1 Introduction

Present policy, which has evolved from a 1983 report to the Planning Commission, dictates that proposed developments generating trips above levels which would have occurred under existing land use designations be assessed a fee based upon total trips generated. This fee will pay a proportionate share of future traffic signals in the project area.

Developments creating additional trips to those provided for under the General Plan will accelerate the need for additional public improvements.

4.2.3.2 Fee Computation

The fee will be computed using the following formula: Total trips generated by the new development multiplied by the traffic signal cost and by the total signal warrant volume (11,200 ADT) for a major intersection. The trip generation rates will be based upon the ITE Trip Generation Manual.

The traffic signal cost will be the construction cost of an eight phase traffic signal installation. The signal volume warrant used in the formula shall equal the State minimum vehicular volume warrant under rural conditions which currently equals 11,200 ADT (Average Daily Traffic).

4.2.3.3 Assessment

This fee will be assessed upon projects receiving discretionary approval by the Planning Commission as part of the General Plan Amendment cycle.

The total fee will be distributed to various future traffic signals in the project vicinity as required by the City Engineer.

CHAPTER 4.3 TENTATIVE SUBDIVISION REVIEW

Sec. 4.3.1 Introduction

This section is intended to serve as a guide for the design and review of the traffic aspects of tentative subdivision maps submitted to the Planning Commission for approval.

Sec. 4.3.2 Street Name Signs

Street name signs shall be paid for and installed by the subdivider and placed in accordance with the conditions of approval for the tentative map. These requirements follow the requirements of City Standard S-40. These shall also be placed at the corner of knuckled streets. Signs placed at T-intersections shall be placed at the lot line location.

Sec. 4.3.3 Regulatory Signs

Developer will be required to pay the cost of furnishing and installing regulatory signs, primarily traffic control, in accordance with the conditions of approval. Developer will also be required to install "No Parking" signs along Major Arterial streets and other locations in accordance with Planning Commission policy.

Other regulatory signs as necessary for traffic control due to phasing of the subdivision may be required either with the conditions of approval or during improvement plan check.

Sec. 4.3.4 Street Widths

Street widths shall conform to the General Plan, to the requirements of City Standard S-26 and to those requirements in the conditions of approval.

Expanded intersections shall be provided, where prior development allows or where required, on major streets in accordance with the standards drawings contained at the end of the Traffic Division of this manual.

Sec. 4.3.5 Waiver of Access

Double frontage lots will require access waived to the major street. Access to major arterials and collectors shall be limited in accordance with Planning Commission policy as detailed in Chapters 4.8 & 4.9 of this manual. Waiver of access will be required as necessary to comply with this policy.

Waivers of access shall conform to Sec. 16.40.020 of the Municipal Code.

Sec. 4.3.6 Temporary Turn-Arounds

Temporary turn-arounds shall be provided on all local dead end streets which extend more than three lots beyond the previous intersection. The turn-around shall be designed with a minimum 38 foot radius. ( See DWG T-14) (Planning Commission 4/19/84)

Sec. 4.3.7 Circulation

The subdivision shall be designed with logical and comprehensible circulation on local streets for all lots to permit economical and practical patterns, shapes, and sizes of development parcels. Local streets shall be designed to minimize through traffic movements which include the use of T-intersections and short block lengths to discourage excessive speeds.

The street system shall conform to the General Plan, any pre-approved master plan or other previous conditions pertaining to development in the area.

Sec. 4.3.8 Geometrics

Street geometrics shall conform to the provisions of Section 3.4.1 of this manual.

CHAPTER 4.4 SITE PLAN REVIEWSec. 4.4.1 Introduction

This section is intended to serve as a guide for the design and review of the traffic aspects of site plans submitted to the Planning Department for approval by the Site Plan Review Committee.

Planned Commercial Developments (PCD) and Planned Unit Developments (PUD) will also be reviewed using the following guidelines.

Sec. 4.4.2 Plan Requirements

- 4.4.2.1 Top to top width of drive approaches shall be shown. Return type approaches shall have 20' radius returns with throat width as specified in the conditions of approval. Drive approaches shall be centered on the drive aisles.

Location of drive approaches shall conform to the requirements of Chapter 4.9, "Site Access Design", of this manual.

- 4.4.2.2 Typical parking layout shall show space sizes, aisle widths, standard and compact space locations.
- Layout shall conform generally to the standard drawing contained at the end of the Traffic Division of this manual. (Fig. T-10)
- 4.4.2.3 Two way drive aisles shall have a minimum width of 24 feet. Minimum drive aisle width of 25 feet is required for proper backup space on layouts with right angle parking.
- 4.4.2.4 Typical stall dimensions shall be shown (see Fig. T-10) and compact spaces denoted (if any).
- 4.4.2.5 Parking spaces shall be designed to prevent cars from backing onto a street. Section 17.58.030 of the Municipal Code expressly prohibits backing out of a parking space onto a street except from a single family (R-1) residence.
- 4.4.2.6 Handicap spaces shall be denoted and designed with dimensions of 9' x 20' with a 5' x 20' unloading zone on either side of the space in conformance with the State Architect's requirements. Two handicap spaces may share a common loading zone between them. Handicap spaces shall be located so that disabled persons are not required to travel behind any vehicle other than their own.
- 4.4.2.7 Walls, landscaping, signs and other facilities shall not obstruct the vehicular line of sight as detailed in Chapter 4.7 of this manual. Wall or fence within 10 feet of a sidewalk at an alley or driveway or within 10 feet of an alley or driveway and adjacent to a parking stall shall not exceed three feet in height. (MC 17.08.175)
- 4.4.2.8 Major projects, as defined in section 4.2.2 of this manual, shall conform to the provisions of that section.

#### CHAPTER 4.5 ENCROACHMENT PERMITS

##### Sec. 4.5.1 Introduction

This section serves as guide for processing encroachment permits with the City. Encroachments are permanent type structures, typically fences or walls, to be placed in the street right-of-way. Encroachment within the Central Business District must be approved by the Central District Development Agency Design Review Committee prior to approval by the City Engineer.

##### Sec. 4.5.2 Fences or Walls, or other Permanent Structures Over 4 feet high

Fences or walls over four feet high in front yards or over six feet high in side yards shall conform to the following provisions.

- 4.5.2.1 A Board of Zoning Adjustment (BZA) modification must first be obtained before any processing of a permit application can take place. Modifications are processed through a public hearing with decisions being discretionary. Please refer to the Planning Department for BZA processing.
- 4.5.2.2 After a BZA modification is granted the permit can be processed by the Public Works Department. This is not an over the counter permit. Once staff has reviewed the application the permit must be approved by the City Engineer.
- a. A sketch or plan must accompany an application for an encroachment permit.
  - b. It must be signed by the property owner or by his agent with a "Power of Attorney" certificate attached.
- 4.5.2.3 The application will be field reviewed by staff.
- 4.5.2.4 The application must meet all "Line of Sight" requirements as detailed in Chapter 4.7 of this manual.
- Sec. 4.5.3 Fences, Walls, or other Permanent Structures less than 4 Feet
- 4.5.3.1 This is not an over the counter permit. Once staff has reviewed the application the permit must be approved by the City Engineer.
- a. A sketch or plan must accompany an application for an encroachment permit.
  - b. It must be signed by the property owner or by his agent with a "Power of Attorney" certificate attached.
- 4.5.3.2 The application will be field reviewed by staff.
- 4.5.3.3 The application must meet all "Line of Sight" requirements as detailed in Chapter 4.7 of this manual.
- Sec. 4.5.4 Awnings, Roof Overhangs, Etc.
- 4.5.4.1 Requirements of Section 4.5.3 shall be met.
- 4.5.4.2 Height clearances may be different for various locations, this must be verified.
- Sec. 4.5.5 Poles, Signs, Newspaper Stands, Trees, Etc.
- Trees to be installed within sidewalks which are to be privately maintained will require an encroachment permit. Requirements of Section 4.5.3 shall be met.

CHAPTER 4.6 ADVANCED PLANNING

Sec. 4.6.1 Introduction

This section is intended to serve as a guide for the design and review of applications to the Planning Commission for General Plan Amendments (GPAs), zone changes, and annexations.

Sec. 4.6.2 Traffic Study

The proposed development will be reviewed with respect to the need for a detailed traffic study. This determination will be based upon the requirement in Chapter 4.1 of this manual. Mitigation measures recommended in the study will be required as conditions of approval.

Sec. 4.6.3 Access

Requirements for limiting or restricting access points will be determined based upon the requirements in Chapters 4.8 and 4.9 of this manual.

Sec. 4.6.4 Expanded Intersections

At intersections of major arterials and major collectors with major arterials or major collectors, expanded intersections conforming to the standard drawings contained at the end of the Traffic Division of this manual will be required. In the event prior development or parcelization do not allow for full expanded intersection the extent of expansion will be determined by the Traffic Engineer.

Sec. 4.6.5 Signal Fees

Traffic signal fees may be imposed as required in the provisions of section 4.2.3 of this manual.

Sec. 4.6.6 Additional Improvements

Additional improvements such as extending streets, adding lanes, constructing median, and other measures to insure adequate circulation may be imposed by the City Engineer.

CHAPTER 4.7 LINE OF SIGHT REVIEWSec. 4.7.1 Introduction

This section is intended as a guide to the construction and restriction of improvements in the line of sight for vehicles entering and exiting City streets as required in section 17.08.175 of the Municipal Code.

A standard drawing is contained at the end of the Traffic Division of this manual illustrating the requirements of this chapter.

Sec. 4.7.2 Uncontrolled Intersections

At all corners located on uncontrolled intersections no obstruction to the driver's view in excess of three feet above the adjacent gutter flowline shall be placed in a triangular area formed by the intersecting street curblines and a line connecting them at points 60 feet from the intersection point.

Sec. 4.7.3 Alleys and Minor Driveways

No obstruction to sight view will be allowed within a triangular area formed by the alley or driveway edge and the interior sidewalk edge (the street right-of-way line if no sidewalk exists) and a line connecting them at points 10 feet from the intersection point.

Sec. 4.7.4 Controlled Intersections

- 4.7.4.1 Sight distance at controlled intersections shall be based upon a sight distance equal to design speed (S) in miles per hour multiplied by a factor of 10. Design speeds for various street classifications are as follows:

<u>Classification</u>	<u>Speed (S)</u>
Local Street	35 MPH
Major Collector	45 MPH
Major Arterial	55 MPH

- 4.7.4.2 Corner sight distance is measured from a point on the minor road fifteen feet from the edge of the major road pavement, and three right of the left edge of the lane under consideration. Said point is viewed from a height of 3.75 feet on the minor road to a height of 4.5 feet on the major road.

- 4.7.4.3 The location of the object to the left is twelve feet from the nearest edge of the major street (six feet with parking prohibited). Parking is assumed to be prohibited on major arterial streets.

4.7.4.4 The location of the object to the right is to be measured at one-half the major road width plus three feet from the nearest edge of the major street.

Sec. 4.7.5 T-Intersections

At uncontrolled T-intersections the requirements of both sections 4.7.2 and 4.7.4 shall be met.

Sec. 4.7.6 Landscaping

4.7.6.1 Landscaping over three feet in height above top of curb shall not be placed within the lines of sight defined in the preceding sections. All landscaping must be maintained at a height of three feet or less with the exception of trees as provided for in section 4.7.6.2 (See DWG T-15)

4.7.6.2 Trees are permitted in the line of sight for controlled intersections provided that the skirt height (bottom of foliage) is maintained seven feet above the adjacent top of curb height. In the event more than one tree is placed in the sight line area they must be placed on a radial from the view point. (See DWG T-15)

CHAPTER 4.8 ACCESS

Sec. 4.8.1 State Highways

Access to State Highways is regulated by CalTrans. Requests for new access and changes to existing access shall be coordinated with CalTrans. Encroachment permits for access to State Highways must be obtained from CalTrans.

Sec. 4.8.2 County Roads

Access to County Roads is regulated by County Public Works. Requests for new access and changes to existing access shall be coordinated with County Public Works. Encroachment permits for access to County Roads must be obtained from County Public Works

Sec. 4.8.3 City Streets - Access Limitations and Intersection Locations (Planning Commission Policy)

4.8.3.1 Major arterial streets are designed primarily for the movement of through traffic (80% to 90%) with minor useage as access to abutting properties (10% to 20%). Major collector streets operate as approximately 40% to 60% either way. Local streets function as nearly 100% access to abutting properties and should be designed to eliminate through traffic.

- 4.8.3.2 Driveway access on major arterials shall be kept to a minimum as determined by safety, topography, zoning and prior parcelization constraints or other special circumstances. Waivers of access on subdivisions shall be provided along major arterials except where driveways access is permitted.
- 4.8.3.3 Minimum full access intersection spacing on major arterials shall be one-third mile, except where special circumstances such as topography and prior parcelization require closer spacing. Closer spacing may be permitted if a traffic signal synchronization study is approved which demonstrates the location to be feasible for a signal.
- 4.8.3.4 Minimum spacing and type of local street access along major arterial and major collector streets shall conform to details T-16 and T-17.
- 4.8.3.5 For circulation purposes no more than 200 residential dwelling units shall be developed with only one access available. Development beyond 200 units will be required to provide a second means of access.

This provision in no way limits more restrictive secondary access requirements, imposed for public safety purposes.

Sec. 4.8.4 City Streets - Driveways

All construction to connect driveways to City streets must first be authorized by a valid Public Works Department Permit for a drive approach or by a subdivision agreement with the City and shall conform to Chapter 17.58 of the Municipal Code.

Drive approaches must lead to a landing zone or legal off street parking space.

The design, number and location of access points must be approved by the City. The number of access points must be kept to a minimum.

- 4.8.4.1 Access points will not be permitted for parking or loading areas which would require backing into City streets with the exception of single family (R-1) residences (MC 17.58.030).
- 4.8.4.2 Where necessary for the safe and efficient movement of traffic, the City may require access points to be designed to provide for limited turning movements.
- 4.8.4.3 One access point per property may be permitted, unless a development or circulation plan is provided which demonstrates that more than one access is required to adequately handle driveway volumes, and will not adversely affect traffic flow on City streets.

Where a property has access to more than one street, access will generally be limited to the lower volume street to minimize the impact upon traffic flow. Access to the higher volume street may be denied and may also be subject to other constraints contained in this manual and by City regulations. Waivers of access on subdivisions shall be provided along major arterials except where driveway access is permitted. Other waivers of access on subdivisions may be required.

Secondary access may be required for use by emergency vehicles.

- 4.8.4.4 Circular Driveways. Each drive shall lead to a standard (8.5' x 20') parking space behind the building setback line. Adjacent drives on the same property shall be a minimum of 20 feet apart. All other standards shall also apply. (See Figure T-13)
- 4.8.4.5 RV Parking. Developed RV parking shall be designed such that entire vehicle is parked behind the building setback line.
- 4.8.4.6 The construction, repair and maintenance of all accesses must conform to City standards and is the responsibility of the property owner.
- 4.8.4.7 After all improvements have been accepted by the City, the reconstruction, repairs, and maintenance of all driveways, drive approaches and sidewalk will be the responsibility of the property owner. During construction all such activities will be the responsibility of the permittee.
- 4.8.4.8 Arrangements for the necessary removal or relocation of any public utilities, structures, trees or plants must be made by the developer or permittee with the person or entity having ownership or control prior to commencing work. Removal or relocations must be accomplished at no cost to the City.

Sec. 4.8.5 City Streets - Turn Lane Storage

In the absence of turning volume data showing the need for greater storage the following lengths shall be used:

Left and right turn storage lanes from major street into another major street shall be designed for a minimum length of 200 feet (measured from end of taper to limit line). Left and right turn storage into local streets or major private entrances shall be 150 feet minimum. Left and right turn storage into minor private entrances shall be 100 feet minimum.

Sec. 4.8.6 Bus Turnout

Bus turnouts and associated speed change lanes may be required and shall be considered on a case by case basis for major arterial streets or other streets with parking prohibited adjacent to the curb. Said consideration shall be made under consultation with the transit authority. Design shall be based upon standards contained in the Caltrans Design Manual.

CHAPTER 4.9 SITE ACCESS DESIGNSec. 4.9.1 Introduction

This chapter is intended to serve as a guide for the placement, size and configuration of site access improvements.

Sec. 4.9.2 Access Widths and Spacing

Accesses shall be located in accordance with the following provisions (See Figure T-12).

- 4.9.2.1 No portion of an access is allowed within a curb return. The top edge of the access must be not less than 5 feet from the end of the curb return for single family residential developments. The distance from center of driveway to end of curb return shall be as indicated in Fig. T-12 or the maximum distance possible, for all other development.
- 4.9.2.2 The nearest top edge of any drive approach must be at least 3 feet from the centerline of any utility pole, drop inlet and/or appurtenance, or traffic signal or light standard, and must also be at least 2 feet from the nearest projection of such facility.
- 4.9.2.3 Where two or more accesses serve adjacent single family residential property, the minimum distance between the nearest top edges of the drive approaches shall be either 5', or shall be greater than or equal to 20 feet.
- 4.9.2.4 Access widths on single family residential property shall conform to the following:

Where two or more accesses serve adjacent non-single family residential property, the minimum distance between the center of the drive approaches shall be 150 feet on arterials and 100 feet on collectors, or the maximum distance possible.

The throat access width (bottom to bottom width on the drive approach) must equal the width of the garage opening if the garage is within 25 feet of the right-of-way line. In all other cases, the drive approach must have a minimum throat width of 12 feet and a maximum throat width of 32 feet.

- 4.9.2.5 Access widths on other than single family residential property shall conform to the following:

The access must have a minimum throat width of 15 feet for one way drive aisles, 24 feet for two way drive aisles and a maximum throat width of 36 feet. For high volume streets the maximum will be required. On industrial type approaches with projected high truck volumes the maximum throat width will be 44 feet. High volume driveways or driveway on high volume streets may be required to be installed with 20' radius street type returns rather than using standard drive approach.

Sec. 4.9.3 Alignment

Accesses must intersect a public street at 90 degrees or as close as possible to 90 degrees plus with a maximum deviation of 15 degrees, 5 degrees for accesses to major streets.

Minimum sight distance shall be provided at all access points in accordance with the provisions of Chapter 4.7.

CHAPTER 4.10 TEMPORARY STREET CLOSURES

Sec. 4.10.1 Introduction

This chapter is intended to service as a guide in the submittal and approval of temporary street closure for business purposes.

Sec. 4.10.2 Application

A Use of Street Permit application and fees shall be submitted along with a signing and Detour Plan and Certificate of Insurance naming the City for \$1,000,000 in Liability Insurance.

Sec. 4.10.3 Approvals

Approval may be granted upon consultation with the Police Department.

Sec. 4.1.2 Traffic Study Format

In order to provide consistency and to facilitate staff review of traffic studies, the following format shall be followed in the preparation of traffic studies.

4.1.2.1 INTRODUCTION

The introduction portion of the report shall contain the following:

a. Land Use, Site and Study Area Boundaries (Provide Map)

A brief discussion of the parcel, the surrounding area (with acreages and building square footages) and identification of streets in the study area and streets providing access to the site.

The exact limits of the study area shall be shown, including roadways, and are based upon engineering judgement and must be mutually agreed to by the City. (1 mile minimum from project unless otherwise directed)

b. Existing and Proposed Site Uses and Site Access

The existing and proposed uses of the site shall be described. Specific uses, where known, shall be identified. The study shall address the worst case traffic impacts based upon possible uses allowed with the project proposal.

A site plan must be provided in the report showing proposed points of access.

c. Existing and Proposed Uses in Vicinity of Site

A complete description of all unbuilt but approved projects, projects in process and proposed projects in the study area with approved uses shall be provided.

If approved uses are not available or undeveloped land has not been proposed for development estimates of land use shall be made based upon present zoning subject to the approval of the City.

d. Existing and Proposed Streets and Intersections

Within the study area, the applicant must describe and provide volumes for existing streets and intersections including geometric and traffic signal control. The same information shall be provided for all such proposed facilities.

4.1.2.2 PROJECT TRIP GENERATION AND DESIGN HOUR VOLUMES

A summary table listing each type of land use, the size involved, the average trip generation rates used (total daily traffic and A.M./P.M. peak hours of the street), and the resultant total trips generated must be provided for the project site and all un-built but approved projects, projects in process and proposed projects within the study area.

Trip generation must be calculated for the maximum uses allowed under the existing and proposed zoning based on the latest data contained within the latest edition of the Institute of Transportation Engineer's (ITE) Trip Generation Manual or more appropriate local data as approved by the Traffic Engineer.

In the event the data is not available for the proposed land use the Traffic Engineer must approve estimated rates prior to acceptance of the draft traffic study report.

The calculation of design hour volumes used to determine study area impacts must be based upon:

- a. Peak hour trip generation rates as published in the ITE Trip Generation Summary.
- b. Recent traffic volume counts for an acceptable number of similar existing uses if no published rates are available. Counts of this nature shall be approved by the Traffic Engineer.
- c. Additional sources from other jurisdictions, or CalTrans if acceptable to the City Engineer.
- d. For mixed use developments, ITE rates must be used to estimate average daily traffic. The P.M. peak hour of the street may be estimated by using 10 percent of average daily traffic.

Internal trip reductions and modal split assumptions will require analytical support to demonstrate their validity and will require approval by the Traffic Engineer.

See Technical Requirements in section 4.2.1.13.

4.1.2.3 TRIP DISTRIBUTION

The estimates of percentage distribution of trips from the proposed development to destinations both within and outside the City must be clearly stated in the report using north, south, east, west compass designations.

Market studies, driveway counts at adjacent uses, or other information concerning origin of trip attractions to the proposed development may be used to support these assumptions when available.

A map showing the percentage of site traffic on each street based on average daily volumes must be provided as part of the study graphic material. Where micro computer modeling is used, such a map need not be provided, but the model's distribution methodology must be discussed.

4.1.2.4 TRIP ASSIGNMENTS

The direction of approach of site generated traffic via the area's street system will be presented in this section. The technical analysis steps, basic methods, and assumptions used must be clearly stated and agreed to by the Traffic Engineer.

The assumed trip distribution and assignment must represent the most logically traveled route for drivers accessing the proposed development. These routes can be determined by observation of travel patterns to existing land uses in the study area.

4.1.2.5 EXISTING AND PROJECTED TRAFFIC VOLUMES

Graphics must be provided which show the following traffic impacts for private access points, intersections and streets required in the traffic study.

- a. P.M. peak hour site traffic (in and out) including turning movements.
- b. P.M. peak hour total traffic including site generated traffic (in and out). These volumes must include through and turning movements for current conditions and separate figures that include the current figures plus all projects to be included in the cumulative analysis.
- c. Any other peak hour determined by the City to be critical to site traffic and the street system in the study area shall be included in the graphics showing the same information as provided for P.M. peak hour.

- d. Actual counts of existing total daily traffic for the street system in the study area at the time the study is being prepared.
- e. Projected total daily traffic for the street system in the study area based on traffic from the proposed development and counts of existing total daily traffic from item d. above. Components of the existing daily traffic attributable to the existing uses must be identified and those increases due to the proposed uses must be identified
- f. Projected total daily traffic for the street system in the study area based on traffic from the proposed development, counts of existing total daily traffic from item d. above, and traffic projections based on all projects to be included in the cumulative analysis.

Peak hours referred to in this section are for the street system and not the generator of the traffic.

All total daily traffic counts must be actual machine counts and not based upon factored peak hour counts. Latest available machine counts obtained from the City, CalTrans or other agencies may be used if not more than a year old.

A book with current year ADT count information as well as a City map showing current year ADT information may be purchased from the City Public Works Department.

#### 4.1.2.6 CAPACITY ANALYSIS

A capacity analysis shall be conducted for all public street intersections impacted by the proposed development and for all private property access points to streets adjacent to the proposed project as specified in the requirements for the traffic study and within the study area.

The P.M. peak period and any other peak period specified by the Traffic Engineer shall be tested to determine which peak hours need to be analyzed. Capacity calculations should also include an analysis for cumulative impacts.

At four-way stop sign intersections, estimates of the delay per vehicle and queue lengths on critical approaches shall be provided.

At two-way stop intersections, the unsignalized intersection analysis contained in the Highway Capacity Manual shall be used.

4.1.2.7 LEVEL OF SERVICE

Level of Service "C" will be the Peak Hour design objective for all movements, and under no circumstances will less than Level of Service "D" be accepted for site and non-site traffic including existing traffic at build out of the study area.

The traffic study must recommend feasible mitigation measures to bring the intersection Level of Service within acceptable standards.

Level-of-service definitions-In general, the various levels of service are defined as follows for uninterrupted flow facilities:

Level-of-service A represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.

Level-of-service B is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A. The level of comfort and convenience provided is somewhat less than at LOS A, because the presence of others in the traffic stream begins to affect individual behavior.

Level-of-service C is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.

Level-of-service D represents high-density, but stable, flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.

Level-of-service E represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver

within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to "give way" to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause breakdowns.

Level-of-service F is used to define forced or "break-down" flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclic fashion. Level-of-service F is used to describe the operating conditions within the queue, as well as the point of the breakdown. It should be noted, however, that in many cases operating conditions of vehicles or pedestrians discharged from the queue may be quite good. Nevertheless, it is the point at which arrival flow exceeds discharge flow which causes the queue to form, and level-of-service F is an appropriate designation for such points.

These definitions are general and conceptual in nature, and they apply primarily to uninterrupted flow. Levels of service for interrupted flow facilities vary widely in terms of both the user's perception of service quality and the operational variables used to describe them.

Detailed definitions for levels of Service "A" through "F" are provided in the Highway Capacity Manual (Special Report 209 of the Transportation Research Board [TRB]).

For existing and future conditions, levels of service shall be calculated using the methods set forth in the Highway Capacity Manual.

All levels of service must be provided with volume to capacity ratios (V/C). Drawings of lane configurations assumed in levels of service calculations shall be included in the report.

#### 4.1.2.8 TRAFFIC SIGNALS

The need for traffic signals shall be based upon warrants contained in the CalTrans Traffic Manual and the Manual on Uniform Traffic Control Devices.

In determining the location of a new traffic signal, progression is of paramount importance. Wherever there is a conflict, State standards will take precedence.

Pedestrian movements shall be considered in the evaluation, and adequate pedestrian clearance provided in the signal cycle split assumptions.

To provide flexibility for existing conditions and ensure optimum two-way signal progression, an approved traffic engineering analysis shall be made to properly locate all proposed access that may require signalization.

The section of street to be analyzed for signal progression will be determined by the Traffic Engineer and will include all existing and possible future signalized intersections.

The progression pattern calculation must use a cycle consistent with present City signal timing policies. A desirable bandwidth of 50% of the signal cycle shall be used where existing conditions allow.

Where intersections have no signals presently, but are expected to have signals, typically a 60% mainline, 40% cross street cycle split should be assumed.

Cycle split assumptions must relate to volume assumptions in the capacity analysis of individual intersections, and where computerized progression analysis techniques are used, they must be of the type which utilize turning movement volume data and pedestrian clearance times in the development of time/space diagrams. Left turn phases from arterials shall be considered in all cases.

The green time allocated to the cross street will be considered no less than the time which is required for a pedestrian to clear the main street using the Manual on uniform Traffic Control Devices standards. Median shall not be considered as a refuge area for pedestrians.

Those intersections which would reduce the optimum bandwidth if a traffic signal were installed or significantly affect the design speed may be required to remain unsignalized and have turning movements restricted.

Time-space analysis shall include the "no new signal" alternative for comparison.

#### 4.1.2.9 TRAFFIC ACCIDENTS

Traffic accident data for affected street corridors may be required for the study. The study period will normally be three years.

Such locations will be specified by the Traffic Engineer and data provided by the City.

Where this is necessary, estimates of increased or decreased accident potential must be evaluated for the development, particularly if the proposed development might impact existing traffic safety problems in the study area, and safety improvements recommended were necessary.

#### 4.1.2.10 RECOMMENDATIONS

In the event that analysis indicates unsatisfactory levels of service ("D" or below) on study area streets, a description of proposed improvements to return intersections to Level of Service "C" must be included.

These proposals would indicate projects by the City, County or CalTrans for which funding has been provided.

The assumptions regarding all future streets and lane configurations in the analysis will require approval from the City.

In general the recommendations shall include the following:

##### a. Proposed Recommended Improvements

This section must describe the location, nature, and extent of proposed improvements to assure sufficient street capacity.

A sketch of each improvement should be provided showing the length, width, and other pertinent geometric features of the improvement.

Sketches are only necessary for major improvements that would result in significant changes in circulation patterns.

##### b. Volume/Capacity Analysis at Critical Points

A table must be provided clearly showing Levels of Service at critical intersections for the following conditions:

- 1) Existing conditions, at time of development
- 2) Existing at time of development plus project traffic without mitigation.
- 3) Existing at time of development plus project traffic with mitigation by funded projects.
- 4) Existing at time of development plus project traffic with mitigation by funded projects and proposed project improvements.

Time of development for these computations shall be determined through consultation with the Traffic Engineer.

c. Traffic Volume Proportions

Percentages based upon the traffic impact analysis may be required to determine the proportion of traffic using various public improvements (both existing and proposed) from several developments within the study area. This apportionment may be applied to the cost of improvements adjacent to the project which may be shared by other new developments.

4.1.2.11 SUMMARY

Within this section a clear concise summary of the report shall be provided. It shall include a general discussion of the data, project scope, findings, conclusions and recommendations. Technical data and calculations should not be provided.

4.1.2.12 REVISIONS

Revisions to the traffic study must be provided as required by the City. The City will determine what revisions must be made.

4.1.2.13 TECHNICAL REQUIREMENTS OF THE FINAL REPORT

The Final Report must meet the following technical requirements :

- a. All computerized analysis output sheets and supporting raw count data, both ADT, turning movement, intersection delay data should be submitted with the draft reports for review.

All assumptions used in the calculations must be referenced to the appropriate table, chart or page of the publication used. Calculations must be comprehensive and presented in a clear manner.

- b. All maps and graphics involving improvements must be drawn to scale with roadway geometrics appropriately dimensioned (e.g. road widths, lane widths, etc.).
- c. After the daily trip adjustment factors have been applied to produce daily trips, the peak hour trips are to be calculated.

Peak hours are 7:30 to 8:30 A.M. and 4:30 to 5:30 P.M. or as directed by the Traffic Engineer.

- d. All raw traffic count data (including average daily volume and peak hour turning movement) and analysis work sheets must be provided in the appendices of the report. Computer printouts may be used as part of the report.

4.1.2.13 TECHNICAL REQUIREMENTS OF THE FINAL REPORT (Continued)

- e. Passerby factors, if used, are to be used to reduce the estimated additional total daily traffic to street(s) serving a proposed development. They are not to be applied directly to reduce trip generation and turning movement volumes at driveways serving the proposed development.

Passerby factors shall be taken from the ITE Trip Generation Manual latest edition and shall be verified through consultation with the Traffic Engineer. Use of passerby factors may be reduced or disallowed entirely by the Traffic Engineer in specific instances where experience has shown them to be invalid due to special circumstances.

4.1.2.14 SUBMITTALS

Two copies of the draft traffic study shall be submitted to the Traffic Engineering Division for review. Upon completion of any revisions two copies of the final report shall be submitted.

Reports must be bound on the left hand side and be 8-1/2 x 11 in format, maps shall be no larger than 11 x 17.

CHAPTER 4.2 IMPROVEMENT FEES

Sec. 4.2.1 Community Offsite Fee

4.2.1.1 Introduction

In February of 1985 the City Council adopted Resolution No. 21-85 adopting a Site Plan Review policy for the assessment of fees to non-residential development to pay for major transportation system improvements benefiting the entire community. This resolution approved the Site Plan Review policy set forth in Planning Commission Resolution No. 7-85. The major provisions of this resolution are outlined in the following sections.

A list of these improvements is included in that resolution, which was modified by Council Resolution No. 122-87 in June of 1987.

4.2.1.2 Affected Projects

Any project receiving a building permit which is non-residential in nature. For the purposes of this policy, hotels, motels, hospitals, convalescent hospitals, rest homes, sanitariums and similar facilities are non-residential uses.

4.2.1.3 Basis for Fee

The fee for each use shall be calculated by the City Engineer or his designee. Said fee is based upon an estimate of the average daily vehicular trips generated by that use or uses, determined pursuant to Table 4.2 provided at the end of this section, minus the number of average daily trips generated by the existing use, multiplied by the fee per vehicular trip.

Where a single project involves multiple uses, the fee charged shall be the sum of all such uses, unless the City Engineer determines that such uses involving a mall or other arrangement of uses under one roof are designed as an integral unit, utilizing common off-street parking facilities and access, in which event the uses shall be considered a "shopping center" and the fee calculated accordingly.

- For any use not listed in Table 4.2.1 the City Engineer shall determine a trip generation rate utilizing the rates set forth in the current edition of the ITE Trip Generation Manual. For any use not listed in the manual, the Traffic Engineer shall determine a trip generation rate utilizing whatever relevant data and sources are available. This list will be updated from time to time as the need dictates.

#### 4.2.1.4 Fee

The fee per vehicular trips shall be as set forth by ordinance.

Said fee will be periodically evaluated by the City and may be revised by the City Council to reflect updated growth and cost projections. The fee will not be updated more frequently than once each year.

#### 4.2.1.5 Refunds

Fees will be refunded only if the project is abandoned, the building permit is surrendered to the Building Director within six (6) months of the date the permit was originally issued and is accompanied by a written request for a refund.

#### 4.2.1.6 Appeals

Any applicant for a building permit assessed fees under this policy may appeal to the City Council claiming the City Engineer erroneously identified the project as constituting a specific listed or as being comparable to a specific listed use. Appeals are governed by Section 17.53.060.I of the Municipal Code.

TABLE 4.2.1  
AVERAGE DAILY VEHICLE TRIP RATES FOR NON-RESIDENTIAL USES

GENERATOR	ADT PER 1,000 SQ.FT. GFA	ADT PER ACRE	ADT PER UNIT LISTED
<u>RETAIL (Primary Use Determines Category)</u>			
<u>Free Standing</u>			
Supermarket (Vons, Ralphs, Safeway)	135		
Discount Store w/Market (Gemco, Target, Costco)	80		
Discount Store (Costco, Zody's)	66		
Department Store	36		
Auto Supply	88		
New Car Dealer	38		
Used Car Dealer	19	45	
Convenience	242		
Boat Sales	19		
Hardware/Paint/Lumber (Lumberjack Type)	55	45	
Multiuse Commercial (Shell)	13		
Carpet Town/Furniture 5/23/88	12		
Laundromat			10 trips/washer
<u>SHOPPING CENTER</u>			
Regional (over 1 million sq.ft.)	33		
(1/2-1 million sq.ft.)	35		
Community (100,000-500,000 sq.ft.)	46		
Neighborhood (under 100,000 sq.ft.)	80		
Central Area (High Dens.)	40		
Special Retail (Beauty Shop, Goodwill, Pic. frame, Swap Meet)	40		
<u>INDUSTRIAL/MANUFACTURING</u>			
<u>Free Standing</u>			
General Manufacturing	4		
Warehouse	5		
Industrial Park	7		
Light Industrial	5		
Heavy Industrial	2		
Mini-Warehouse, including storage containers	3		
Office/Warehouse (Shell)	7		
Industrial Use - (Equipment Rental)Yard		50	In addition to fee for Bldg.
<u>OFFICES</u>			
General - under 100,000 sq.ft.	13		
General - over 100,000 sq.ft.	11		
Governmental	48		
Medical	44		
Medical Lab	13		

TABLE 4.2.1  
AVERAGE DAILY VEHICLE TRIP RATES FOR NON-RESIDENTIAL USES

GENERATOR	ADT PER 1,000 SQ. FT. GFA	ADT PER ACRE	ADT PER UNIT LISTED
<u>RESTAURANTS</u>			
Sit down - low turnover (e.g. Black Angus, J.C. Scotts)	78		
Sit down - high turnover (e.g. Denny's, Bob's, Straw Hat)	133	BEER BAR	
Drive-in - (take-out) (e.g. McDonald's Burger King, KFC)	343		
Drive-in - (take-out) freestanding pad within Shopping Center Complex	257		
Beer Bar	133		
Doughnut Shop (free standing pad of main center)	257		
Center 50,000 GSF	120		
Center 50,000-100,000	80		
Pizza Delivery			1 per Pizza Order
<u>SAVINGS &amp; LOAN/BANK</u>			
Walk-in	143		
Drive-in	161		
Check Cashing Office	72		
<u>PARKS &amp; RECREATION</u>			
Golf Course		7	
Bowling		296	
Participant sports		27	3.1 per parking space
Health Clubs	12		
Lake/Boating		4	
Animal Attractions		4	
<u>HOSPITALS</u>			
General			10 per bed
Convalescent/Nursing Home			3 per bed
<u>EDUCATIONAL</u>			
Colleges/Trade Schools			2 per student
High School			1.5 per student
Elementary/Jr. High School/ Child Care Center			1 per student
Libraries	35		
Gymnasium			1.5 per student
<u>AIRPORTS</u>			
Local Airport		4	
<u>HOTEL/MOTEL</u>			
*Hotel			10 per room
Motel			9 per room

TABLE 4.2.1  
AVERAGE DAILY VEHICLE TRIP RATES FOR NON-RESIDENTIAL USES

GENERATOR	ADT PER 1,000 SQ. FT. GFA	ADT PER ACRE	ADT PER UNIT LISTED
<u>MISCELLANEOUS</u>			
Service Station			133 per nozzle
Minimart with 6 nozzles or less			242 trips per 1000 S.F. of Convenience Store Area
Minimart with 7 nozzles or more			133 trips per nozzle
Theatres			1 per 2 seats
Auto Repair (no fuel pumps)	10		
Auto Detail Shop (no fuel pumps)	10		
Self-Serve Car Wash			15 per car wash bay
Car Wash		600	
Church			17.5 per--(1,000 S.F. net Sanctuary Area)
Recycling Bank (Alum. Cans)			10 per--(recycling unit)
Transportation Facility (Bus Depot)	25		
Charter Bus Depot w/nominal wait area)	12		
Postal Service Center	140		
T.V., Electronic Repair	13		

NOTES: Use higher number of total trips where more than one criterium is given for trip rates (e.g.-per 1,000 square feet and per acre).

\*No additional fee charged for restaurants, offices, etc. if they are an integral part of the structure

Sec. 4.2.2 Major Retail Fees4.2.2.1 Introduction

In August of 1983 the City Council adopted Resolution No. 111-83 approving the Site Plan Review Policy for major retail projects adopted by the Planning Commission in its Resolution No. 55-83. The major provisions of this resolution are outlined in the following sections.

This policy sets forth the criteria for a major retail project, determining its impact on public improvements, the required mitigation for those impacts and determining the apportionment of responsibilities and costs relative thereto.

4.2.2.2 DefinitionsMajor Retail Project

A major retail project is defined to include each of the following:

- a. Any single retail store or business with a total gross floor area of 75,000 square feet or more.
- b. Any retail shopping center with a gross floor area of more than 100,000 square feet.
- c. An addition to any existing retail shopping center with a gross floor area of more than 100,000 square feet which increases the total gross floor area twenty percent (20%) or by more than 75,000 square feet, or an addition to any shopping center which increases the shopping center to 150,000 square feet or more.

Shopping Center

A shopping center means any group of at least two businesses on a single or separate parcels of property which group utilize common off-street parking facilities and access.

Public Facilities

Public facilities means streets, street and bridge (including overpass) widenings, paving, street lights, traffic signs and signals, curbs, gutters, sidewalks, medians, median irrigation systems and landscaping, intersection and access constructions and reconstructions; water mains, wells, pumping and storage facilities, including construction and upgrading to increase fire flows; sewer mains, pumping and lift stations; drainage lines, culverts, sumps, and pumping facilities; utility system extension or upgrading; fencing and landscape screening (including irrigation) for any of the foregoing; transit stops; and any equipment or facility made necessary by the project and to be used primarily in relation to the project, including the fees and costs for plans and specifications for such public facilities.

4.2.2.3 Method of Cost Assessment

Unless the City Engineer and the applicant otherwise agree, the needs for improvements and apportionment of costs shall be assessed and made pursuant to the written report of one or more consultants hired by the City for such purpose by the City whose fees and costs are advanced to the City by and are the responsibility of the applicant.

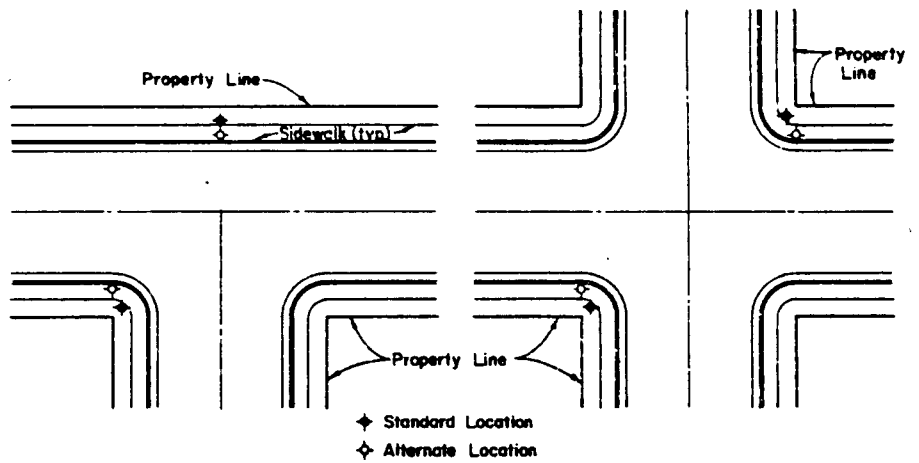
If the applicant and the City Engineer do not agree upon a consultant, the applicant shall select a consultant from a list of three provided by the City Engineer. If more than one consultant is to be used the City Engineer shall provide a list of three for each to be selected. Such report shall be prepared in accordance with the parameters set by the City Engineer.

4.2.2.3 Deposit

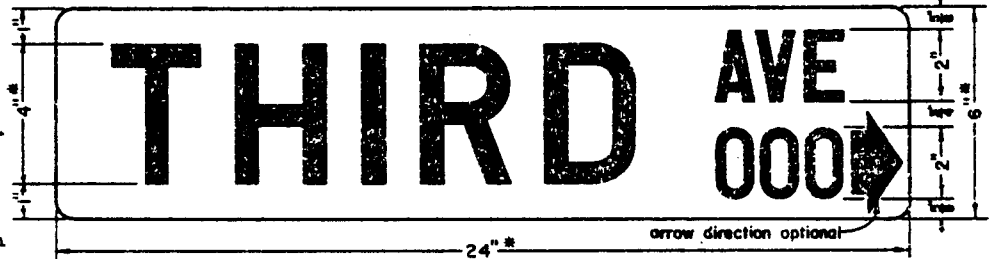
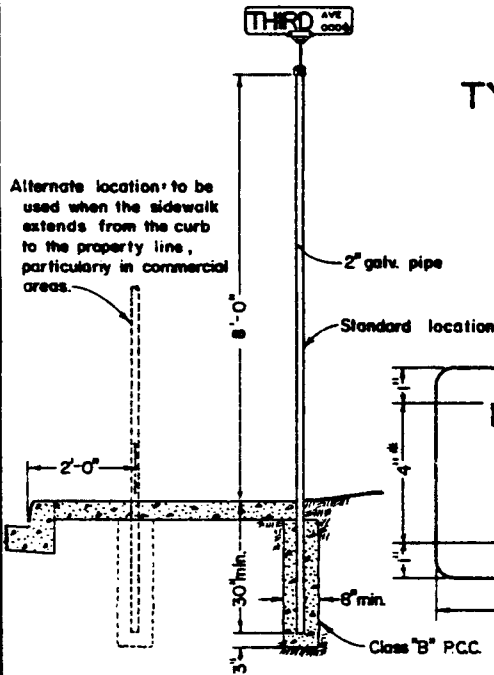
Costs assessed pursuant to these provisions will be deposited in a special account with the City for each public facility for which they are assessed.

4.2.2.4 Refunds

Should a site plan expire under the provisions of Section 17.53.060.H of the Municipal Code or a project is abandoned by written notice to the City's Planning Director and City Engineer after approval of a site plan, the assessments made and paid, excluding the amount paid a consultant and any amount committed by contract already let for a public facility, shall be refunded.



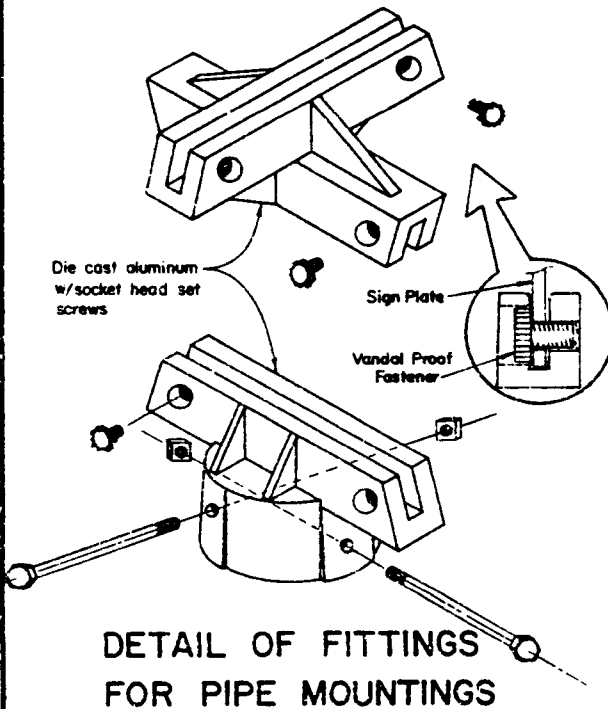
### TYPICAL LOCATION PLAN FOR INSTALLATION OF STREET SIGN POSTS



\* See specifications

### DETAIL OF SIGN PLATE

### DETAIL OF SIGN POST



DETAIL OF FITTINGS FOR PIPE MOUNTINGS

### SPECIFICATIONS

Signs provided shall be accompanied by a certificate to show compliance to City Standard.

Sign plates to be made of Q125 aluminum plate, cut to dimensions specified.

Plates shall have engineering grade fully reflectorized finish—green background w/ silver copy. (both sides)

Format shall be Hawkins-Hawkins Co., Inc. SM-C12 or prior approved equal in writing.

Signs facing traffic on local and local collector streets shall be standard size (as shown). Signs facing traffic on major and major collectors shall be metro size (30" x 8") w/ 5" caps.

Mounts for plates shall be Hawkins-Hawkins Co., Inc. vandal-proof (HD) VP 90° crosspiece VI4F-(HD) VP-105 (90) and pipe cap VI4F-(HD) VP-107 (2C) to fit a 2" I.D. pipe or approved equal.

Install two 5/16" x 3 1/2" bolts through pipe cap and pipe. Peer end of bolt so nut is tamper-proof.

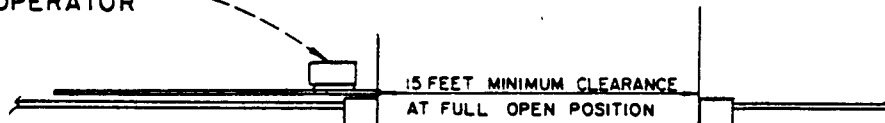
Special Design Vandal-Proof Fastener VI4F-(HD) VP-12 PT Knurled head, 1/2" length, nominal or prior approved equal shall be used.

APPROVED BY THE CITY ENGINEER.	DATE FEBRUARY 3, 1985
<i>Paul Williams</i> CITY ENGINEER	
APPROVED	
<i>George J. ...</i> CITY ENGINEER	

STANDARD STREET SIGN POST TYPE
CITY OF BAKERSFIELD CALIFORNIA ENGINEERING DEPARTMENT

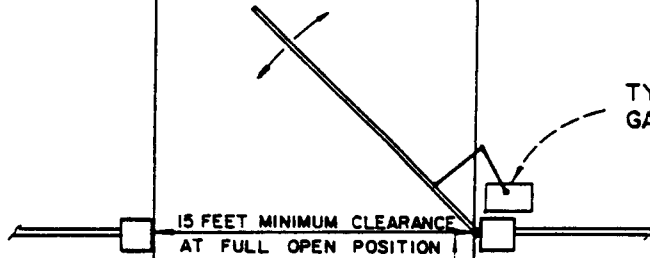
DATE Aug. 30, 1985
DRAWN J. STINSON
CHECKED <i>...</i>
SCALE NONE
No S-40

TYPICAL SLIDING  
GATE OPERATOR



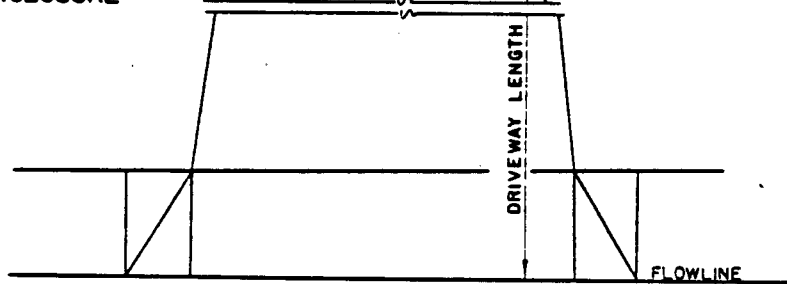
SLIDING GATE

TYPICAL SWING  
GATE OPERATOR



SWING GATE

GATE CONTROL BOX  
WITH FIREBOX ENCLOSURE  
AND SWITCH



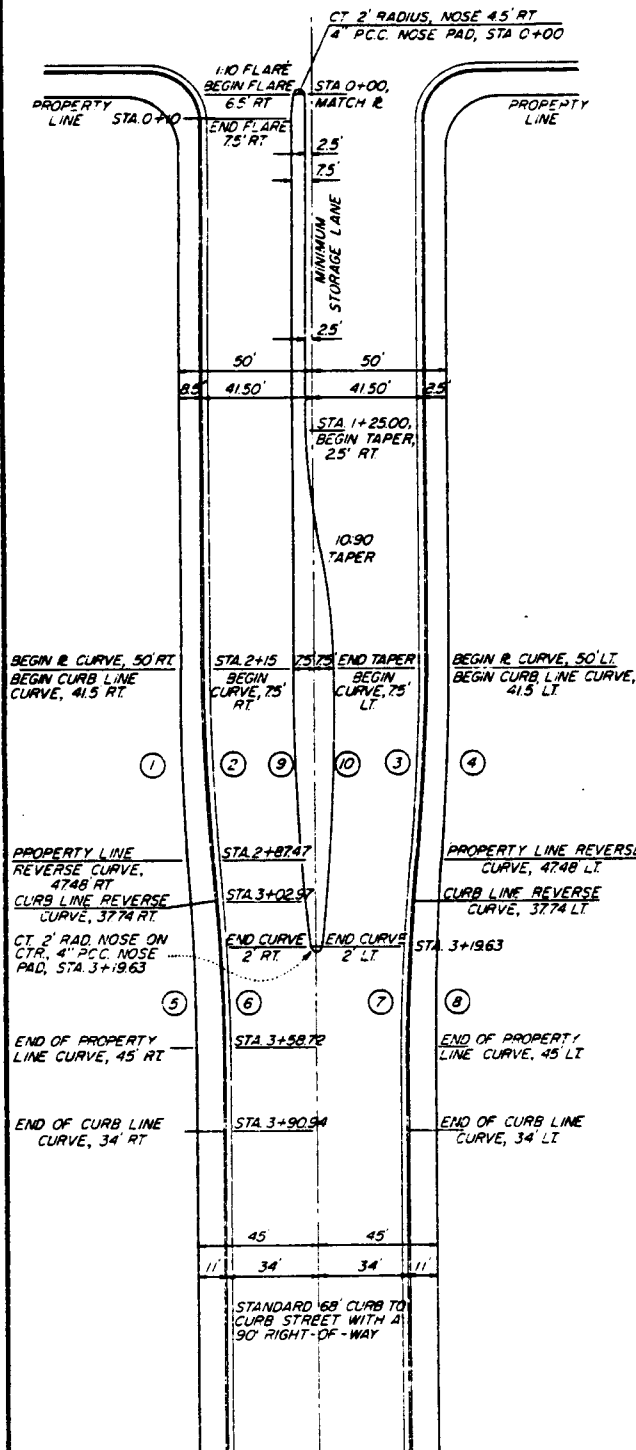
GENERAL NOTES

1. SLIDING OR SWINGING GATES SHALL PROVIDE A MINIMUM HORIZONTAL CLEARANCE OF 15'-0" AND A MINIMUM VERTICAL CLEARANCE OF 14'-0" WHEN GATE IS AT THE FULL OPEN POSITION. HORIZONTAL DISTANCE SHALL BE MEASURED PERPENDICULAR TO THE DIRECTION OF TRAVEL ON THE DRIVEWAY. VERTICAL DISTANCE SHALL BE MEASURED FROM THE HIGHEST ELEVATION OF THE DRIVEWAY TO THE LOWEST OVERHEAD OBSTRUCTION.
2. A FIREBOX ENCLOSURE WITH AN OVERRIDE SWITCH TO OPEN THE GATE SHALL BE INSTALLED AT EACH GATE CONTROL BOX LOCATION. THE FIREBOX SHALL BE INSTALLED ON THE GATE CONTROL PEDESTAL OR ON THE GATE CONTROL BOX. THE FIREBOX SHALL BE A N.E.M.A. TYPE 3R RAIN TIGHT CABINET WITH A STANDARD KEY LOCK. STANDARD KEY LOCK SHALL BE APPROVED BY THE CITY OF BAKERSFIELD FIRE DEPARTMENT PRIOR TO INSTALLATION. THE OVERRIDE SWITCH SHALL BE MOUNTED ON A DEADFRONT SWITCHBOARD.
3. ALL ELECTRICAL EQUIPMENT FOR USE IN A FIREBOX SHALL CONFORM TO SECTION 86-1.02 "REGULATIONS AND CODE," OF THE STANDARD SPECIFICATIONS, State of California, Department of Transportation, current edition.
4. THE GATE OPERATOR SHALL HAVE A DISCONNECT FEATURE FOR MANUAL OPERATION OF THE GATE WHEN THE POWER FAILS.
5. A MINIMUM DRIVEWAY LENGTH TO THE GATE FROM THE FLOWLINE OF THE PUBLIC STREET SHALL BE 50 FEET FOR DEVELOPMENTS OF 20 UNITS OR LESS. FOR EACH INCREMENT OF 20 UNITS THEREAFTER, AN ADDITIONAL 20 FEET OF STORAGE LENGTH FOR WAITING VEHICLES SHALL BE ADDED TO THE DRIVEWAY LENGTH.

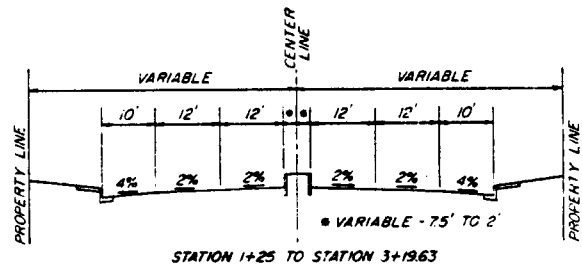
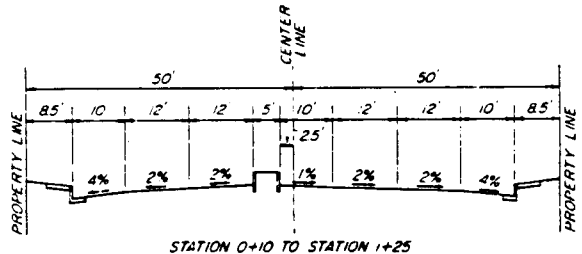
REVISED JUL 80

APPROVED BY THE CITY COUNCIL JUNE 3, 81 <i>Philip Selman</i> CITY CLERK	-STANDARD- PRIVATE STREET GATES	DATE MAY 5, 1981
APPROVED <i>J. Dale Hawley</i> CITY ENGINEER		DRAWN SLW CHECKED JLH SEALED NONE
CITY OF BAKERSFIELD CALIFORNIA ENGINEERING DEPARTMENT		No S-42

INTERSECTION OF MAJOR ARTERIAL  
OR MAJOR COLLECTOR



PLAN



TYPICAL CROSS SECTIONS

CURVE DATA			
1	R=1042.5'	Δ=3°59'10"	L=72.53' T=36.28'
2	R=1034'	Δ=4°52'50"	L=88.08' T=44.07'
3	R=1034'	Δ=4°52'50"	L=88.08' T=44.07'
4	R=1042.5'	Δ=3°59'10"	L=72.53' T=36.28'
5	R=1025'	Δ=3°59'10"	L=71.31' T=35.67'
6	R=1034'	Δ=4°52'50"	L=88.08' T=44.07'
7	R=1034'	Δ=4°52'50"	L=88.08' T=44.07'
8	R=1025'	Δ=3°59'10"	L=71.31' T=35.67'
9	R=1000'	Δ=6°01'05"	L=105.03' T=52.57'
10	R=1000'	Δ=6°01'05"	L=105.03' T=52.57'

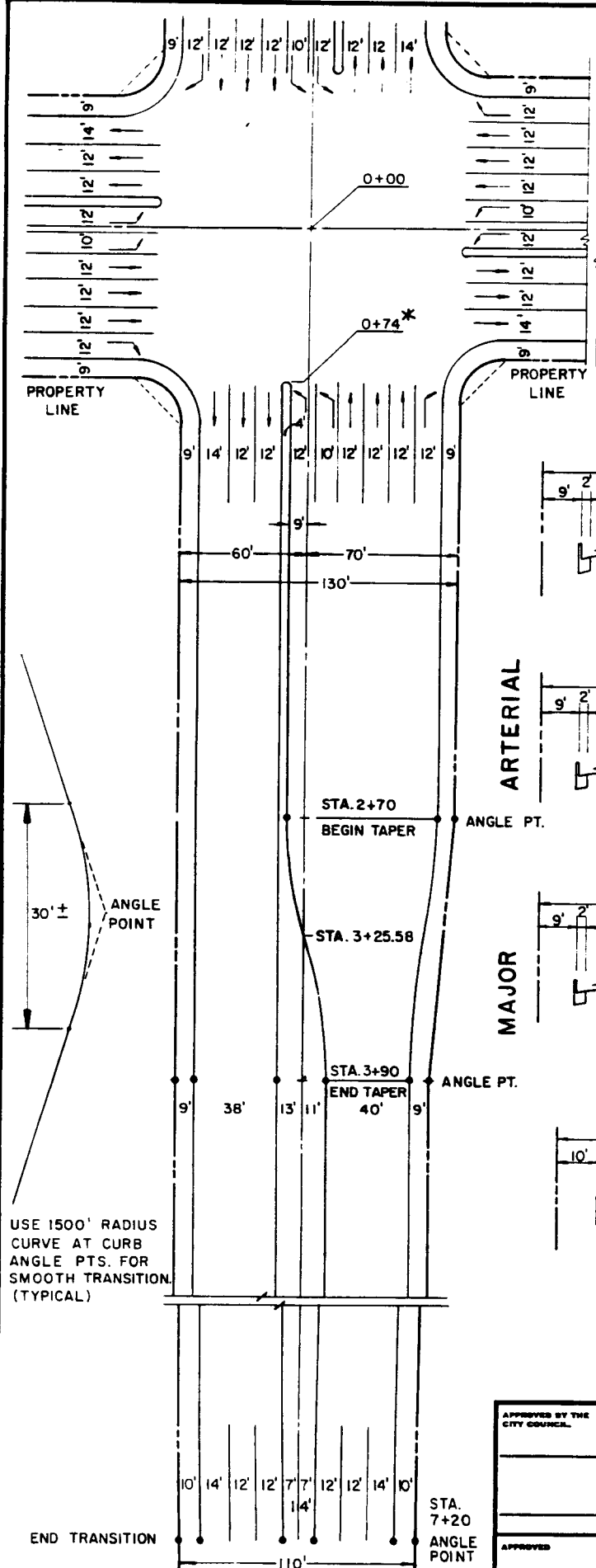
TO BE USED AT LOCATIONS WHERE ON STREET  
PARKING MUST REMAIN DUE TO LOTS FRONTING  
ONTO COLLECTOR.

REVISED JUL '89

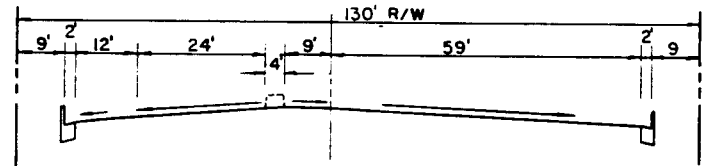
APPROVED BY THE CITY COUNCIL <i>[Signature]</i>	<p>• STANDARD • MAJOR COLLECTOR TRANSITION FOR LEFT TURN LANE AT INTERSECTION WITH A MAJOR ARTERIAL OR A MAJOR COLLECTOR</p>	DATE FEB 9, 1971
CITY CLERK <i>[Signature]</i>		DRAWN E.W.H.
APPROVED <i>[Signature]</i>	<p>CITY OF BAKERSFIELD CALIFORNIA</p>	CHECKED R.H.M.
CITY ENGINEER		SCALES NONE
	ENGINEERING DEPARTMENT	S-37

### TRANSITION TAPER DATA

STA.	OFFSET FROM $\bar{C}$ CONSTRUCTION	
	MEDIAN CURB $\bar{C}$	CURB & GUTTER $\bar{C}$
2+70	9.00' RT.	61.00' LT.
2+80	8.69' RT.	60.84' LT.
2+90	7.75' RT.	60.37' LT.
3+00	6.19' RT.	59.59' LT.
3+10	4.00' RT.	58.50' LT.
3+20	1.50' RT.	57.25' LT.
3+30	1.00' LT.	56.00' LT.
3+40	3.50' LT.	54.75' LT.
3+50	6.00' LT.	53.50' LT.
3+60	8.19' LT.	52.41' LT.
3+70	9.75' LT.	51.62' LT.
3+80	10.69' LT.	51.16' LT.
3+90	11.00' LT.	51.00' LT.

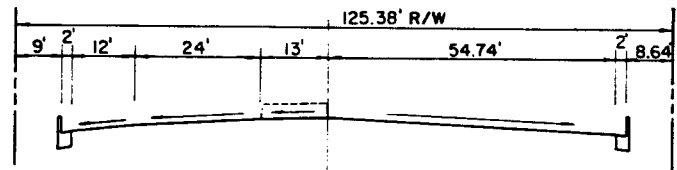


### MAJOR ARTERIAL



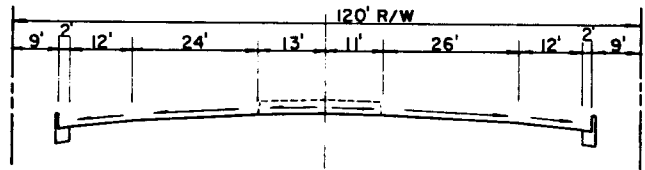
STA. 0+74 TO 2+70

### ARTERIAL

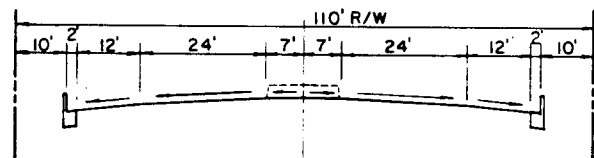


STA. 3+25.58

### MAJOR



STA. 3+90



STA. 7+20

### SELECTED CROSS SECTIONS

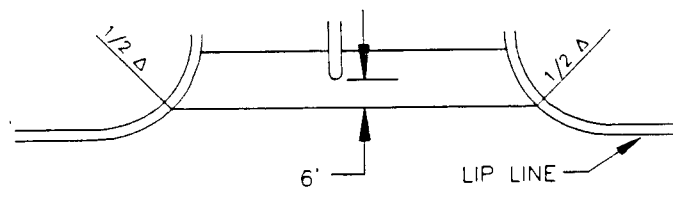
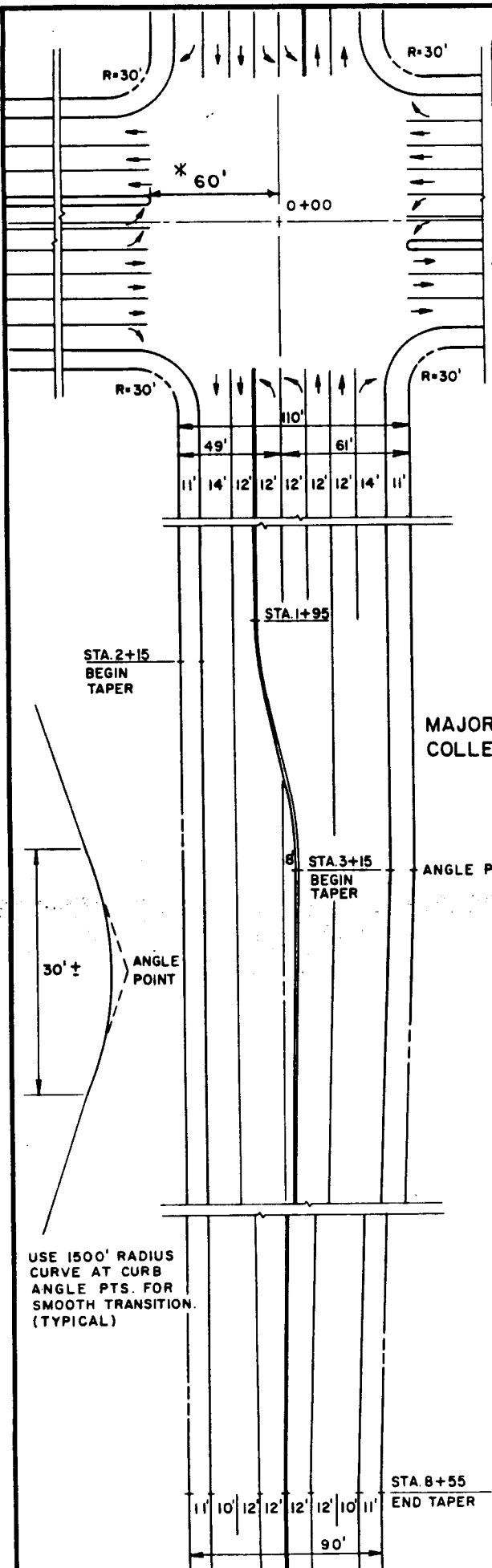
USE 1500' RADIUS CURVE AT CURB ANGLE PTS. FOR SMOOTH TRANSITION. (TYPICAL)

END TRANSITION

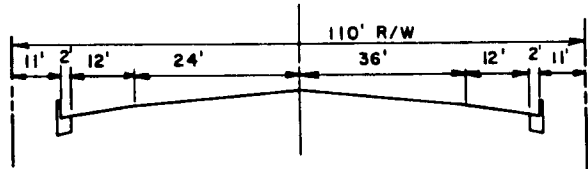
STA. 7+20 ANGLE POINT

\* 0+74 FOR FULLY EXPANDED 90° INTERSECTIONS SEE "NOSE LOCATION DETAIL" ON SHEET T-5 FOR OTHER INTERSECTION CONFIGURATIONS.

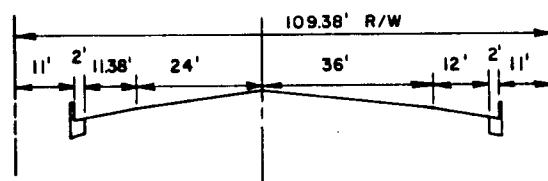
APPROVED BY THE CITY COUNCIL	- STANDARD - MAJOR ARTERIAL TRANSITION AT INTERSECTION WITH MAJOR ARTERIAL	DATE AUG. 7, 1981
CITY CLERK		DRAWN S.W.
APPROVED	CITY OF BAKERSFIELD CALIFORNIA ENGINEERING DEPARTMENT	CHECKED J.L.H.
<i>[Signature]</i> CITY ENGINEER		SCALES NONE
		T-4



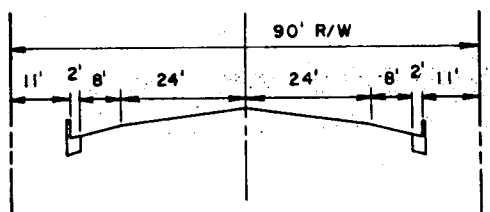
NOSE LOCATION DETAIL  
FOR NON-EXPANDED OR  
PARTIALLY EXPANDED INTERSECTIONS



STA. 0+70 TO 2+15



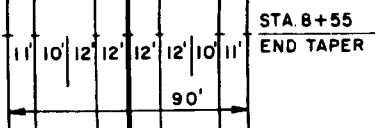
STA. 3+15



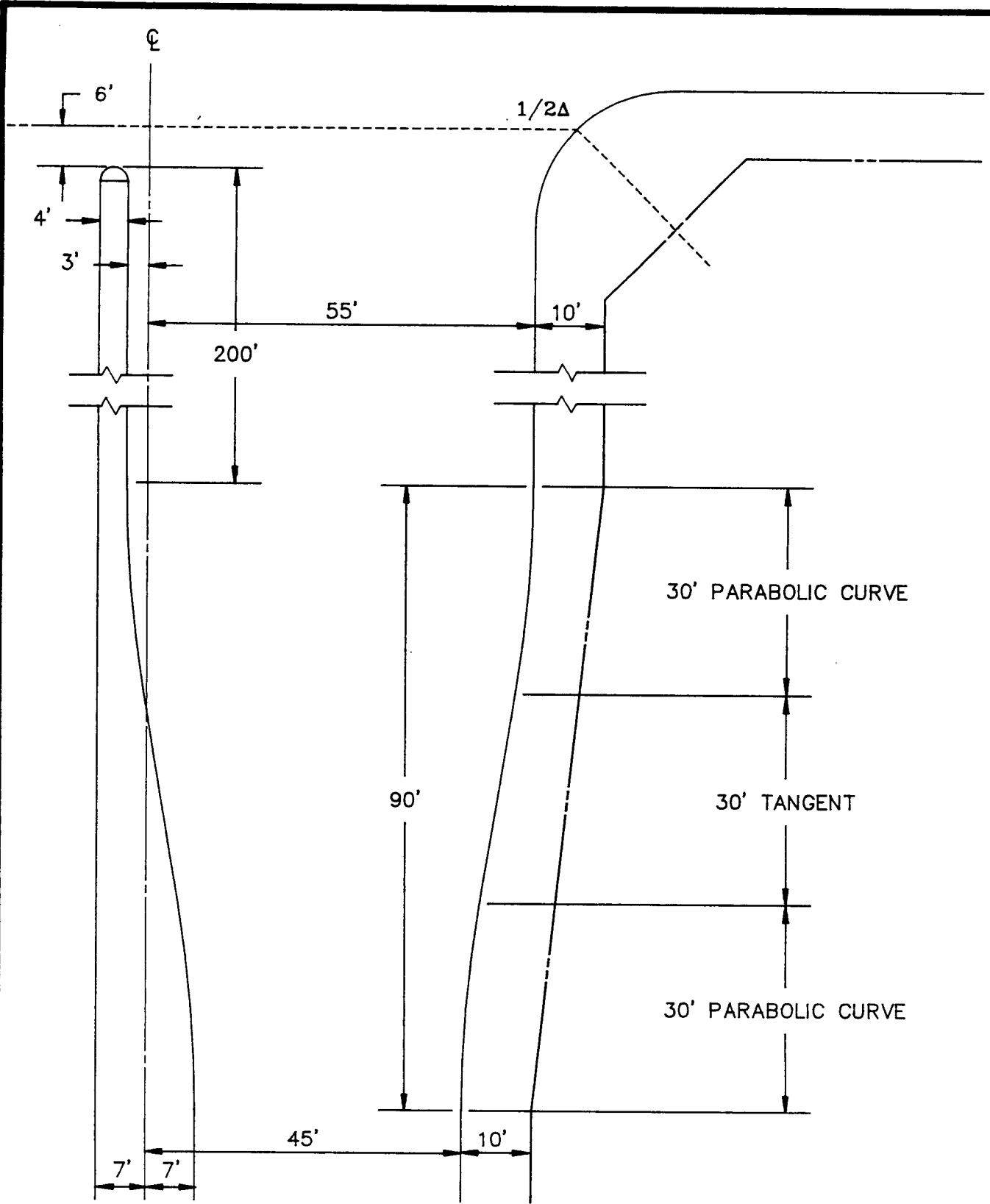
STA. 8+55

\* 60' FOR FULLY EXPANDED 90° INTERSECTIONS  
SEE "NOSE LOCATION DETAIL" ABOVE FOR  
OTHER INTERSECTION CONFIGURATIONS.

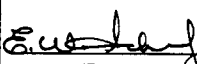
USE 1500' RADIUS  
CURVE AT CURB  
ANGLE PTS. FOR  
SMOOTH TRANSITION.  
(TYPICAL)

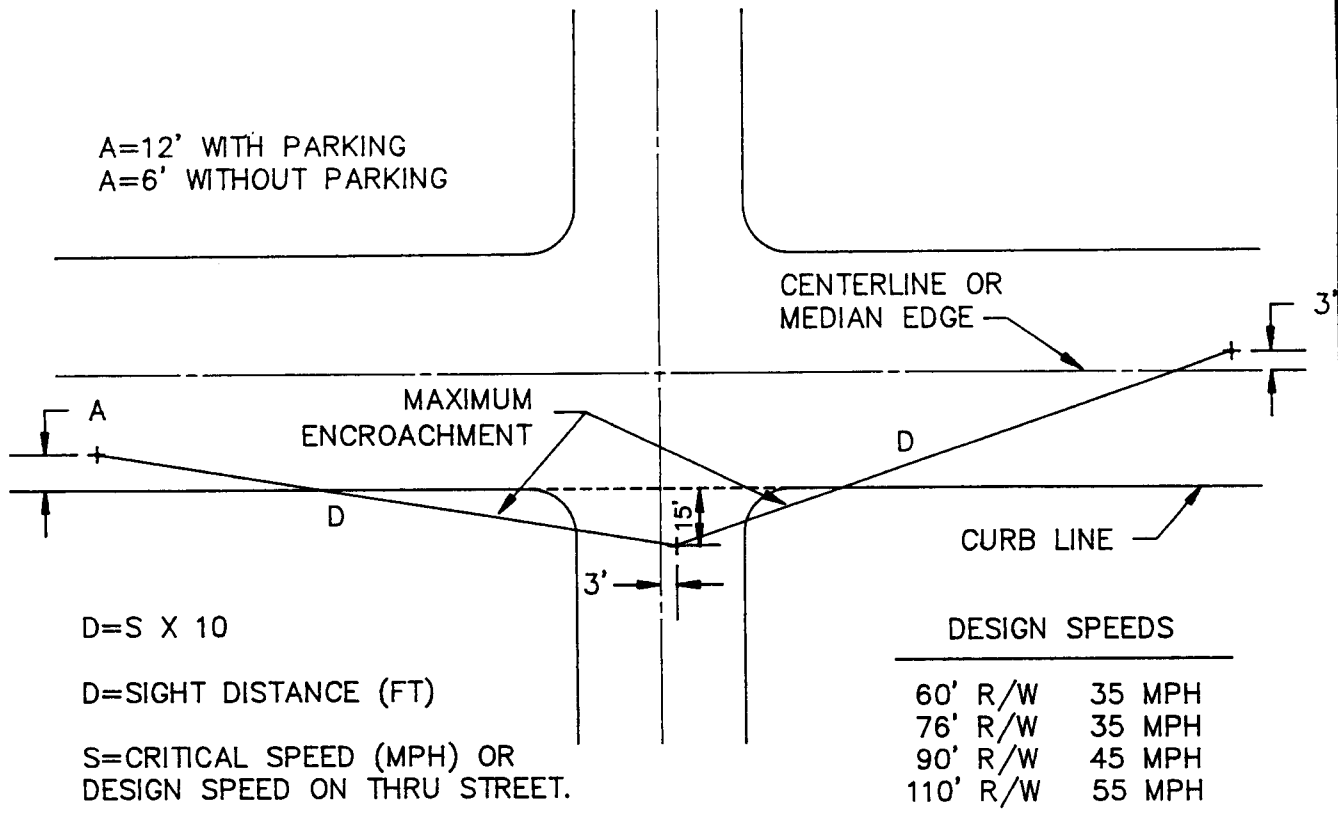


APPROVED BY THE CITY COUNCIL	STANDARD MAJOR COLLECTOR AT INTERSECTION WITH MAJOR ARTERIAL	DATE APR 6, 1984
		DRAWN G.E.G.
CITY CLERK	CITY OF BAKERSFIELD CALIFORNIA	CHECKED S.L.W.
APPROVED		SEALER NONE
<i>E. ...</i> CITY ENGINEER	ENGINEERING DEPARTMENT	T-5

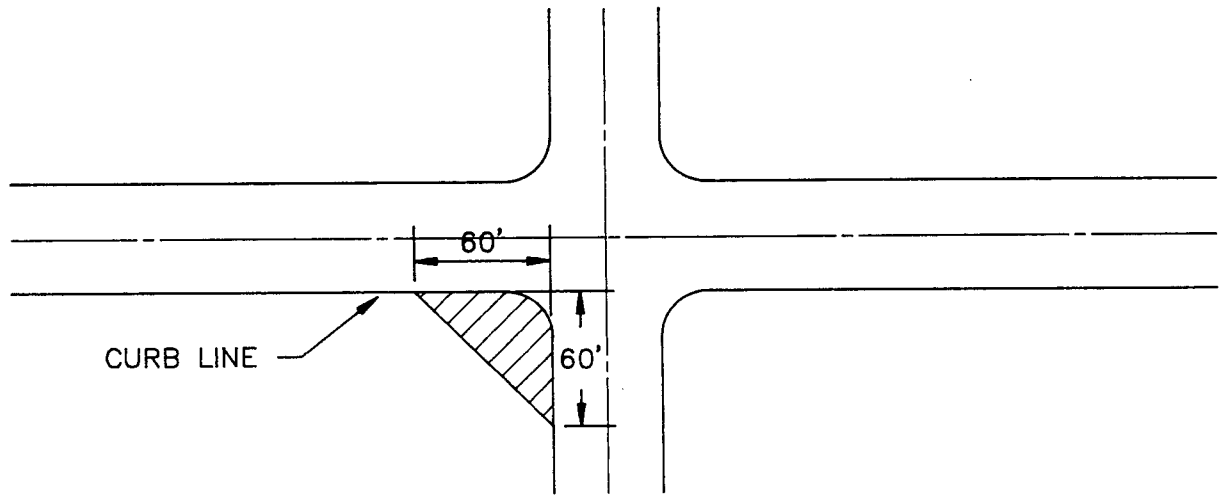


DETAIL TO BE USED WHERE FULL EXPANSION OF INTERSECTION AS SHOWN IN DETAILS T-4 & T-5 ARE NOT POSSIBLE DUE TO PRIOR DEVELOPMENT OR PARCELIZATION.

APPROVED	SUBDIVISION DESIGN MANUAL	DATE
	MAJOR STREET INTERSECTION EXPANSION FOR LEFT AND RIGHT TURN LANES	9/20/88
 CITY ENGINEER	CITY OF BAKERSFIELD CALIFORNIA	DRAWN
	ENGINEERING	BJD
DEPARTMENT		CHECKED
		SCALE
		NTS
		SHEET NO.
		T-6



## CONTROLLED INTERSECTION



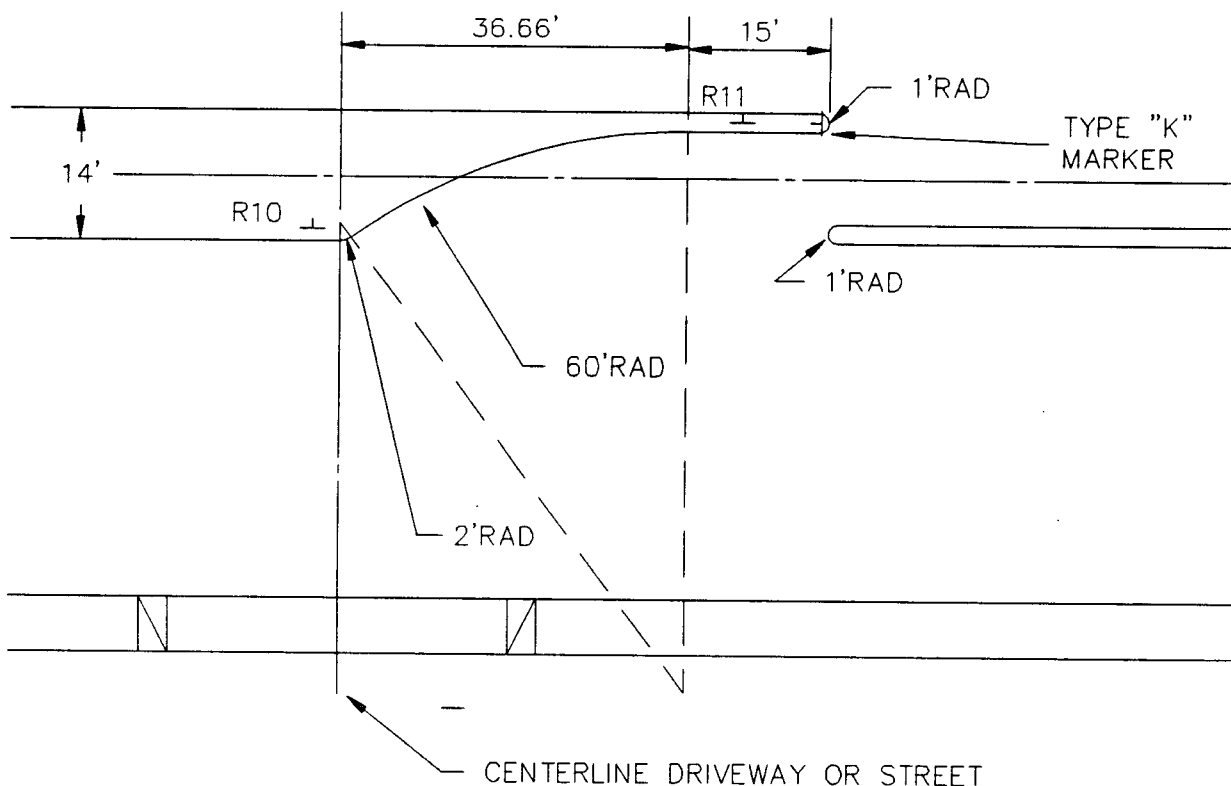
## UNCONTROLLED INTERSECTION

- NOTES**
- BOTH CRITERIA GOVERN AT AN UNCONTROLLED T-INTERSECTION.
  - SIGHT LINE REQUIREMENTS PER SEC. 17.08.175 OF THE MUNICIPAL CODE.

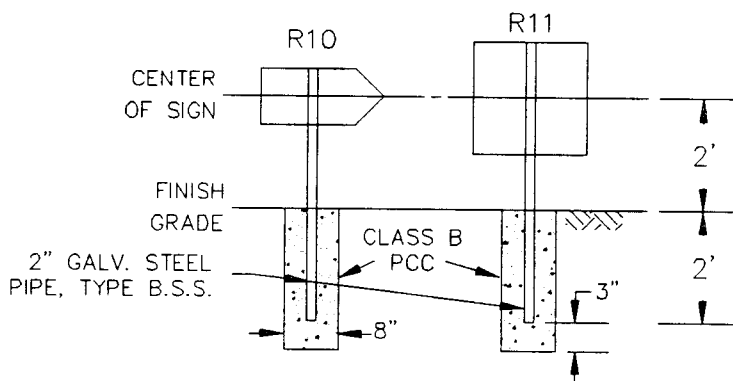
	SUBDIVISION DESIGN MANUAL	DATE	9/20/88
	SIGHT DISTANCE REQUIREMENTS FOR INTERSECTIONS	DRAWN	BJD
		CHECKED	
		SCALE	NTS
APPROVED	<b>CITY OF BAKERSFIELD CALIFORNIA</b>	SHEET NO.	T-7
<i>[Signature]</i> CITY ENGINEER	ENGINEERING	DEPARTMENT	

CURVE DATA

$\Delta = 36^{\circ}14'58''$	$\Delta = 36^{\circ}14'58''$
$R = 60.00'$	$R = 2.00'$
$L = 37.96'$	$L = 1.27'$
$T = 19.64'$	$T = 0.65'$



SIGN MOUNTING DETAIL

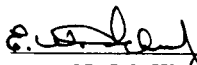


LEGEND TO SIGNS

R10 - DENOTES "ONE WAY" SIGN PER CALTRANS TRAFFIC MANUAL

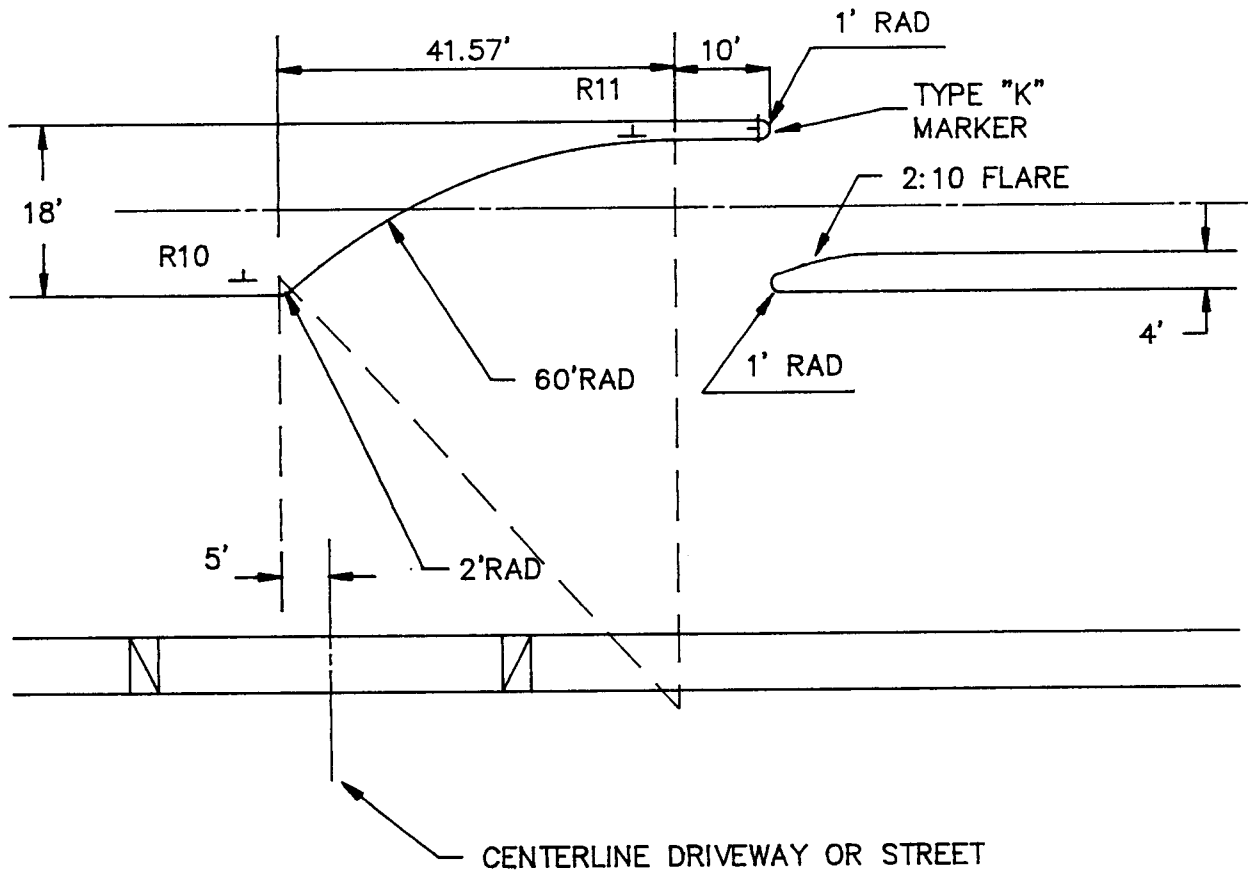
R11 - DENOTES "DO NOT ENTER" SIGN PER CALTRANS TRAFFIC MANUAL

TYPE "K" MARKER SHALL BE FLEXIBLE POST MARKER YELLOW ON WHITE PER CALTRANS TRAFFIC MANUAL.

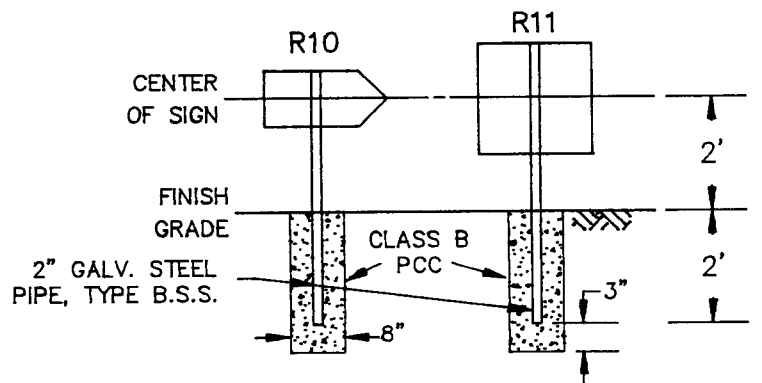
	SUBDIVISION DESIGN MANUAL	DATE 7/25/89
	ONE-WAY MEDIAN OPENING WITH 14' WIDE MEDIAN	DRAWN BJD
APPROVED  CITY ENGINEER	CITY OF BAKERSFIELD CALIFORNIA	CHECKED
	ENGINEERING DEPARTMENT	SCALE NTS
		SHEET NO. T-8

CURVE DATA

$\Delta = 42^{\circ}6'12''$	$\Delta = 42^{\circ}6'12''$
$R = 2.00'$	$R = 60.00'$
$L = 1.47'$	$L = 44.09'$
$T = 0.77'$	$T = 23.09'$



SIGN MOUNTING DETAIL




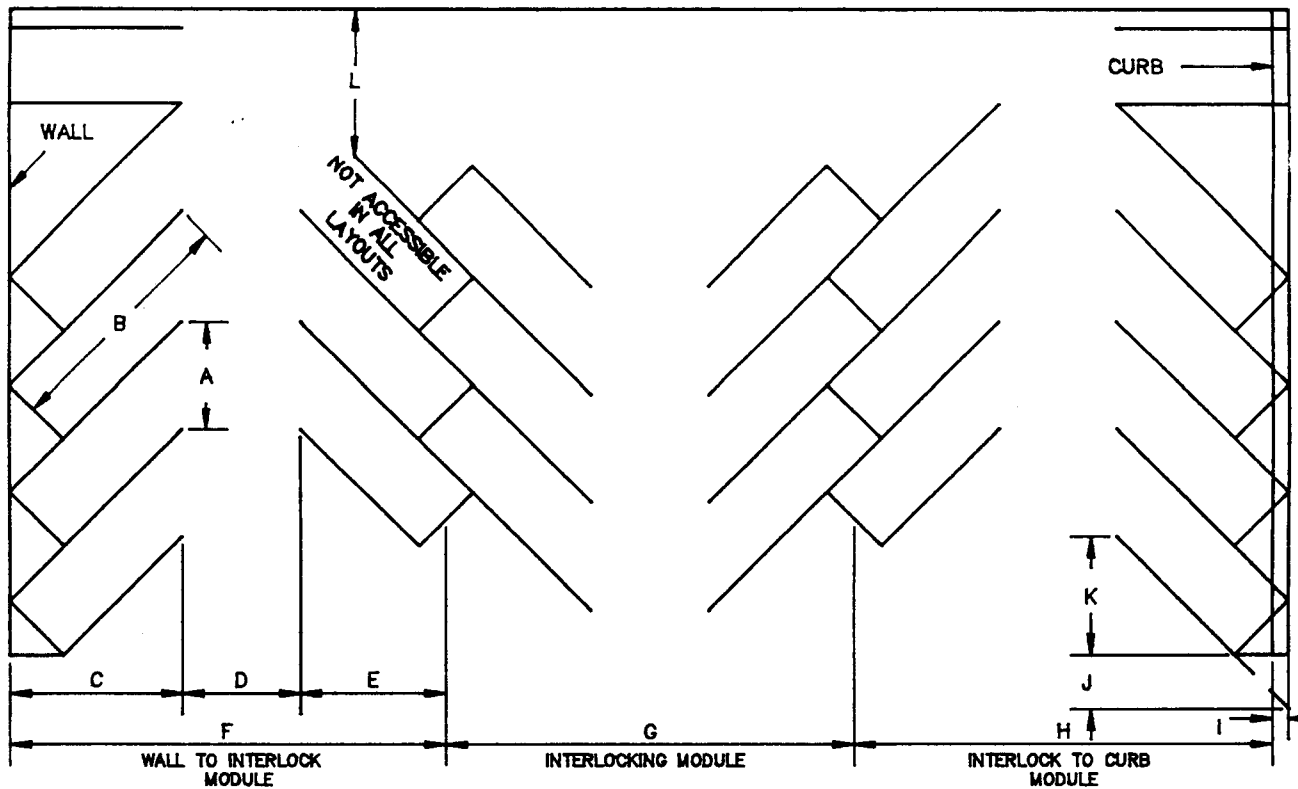
LEGEND TO SIGNS

R10 - DENOTES "ONE WAY" SIGN PER CALTRANS TRAFFIC MANUAL

R11 - DENOTES "DO NOT ENTER" SIGN PER CALTRANS TRAFFIC MANUAL

TYPE "K" MARKER SHALL BE FLEXIBLE POST MARKER YELLOW ON WHITE PER CALTRANS TRAFFIC MANUAL.

APPROVED	SUBDIVISION DESIGN MANUAL		DATE
	ONE-WAY MEDIAN OPENING WITH 18' WIDE MEDIAN		7/25/89
 CITY ENGINEER	CITY OF BAKERSFIELD CALIFORNIA		DRAWN
	ENGINEERING		BJD
	DEPARTMENT		CHECKED
			SCALE
			NTS
			SHEET NO.
			T-9



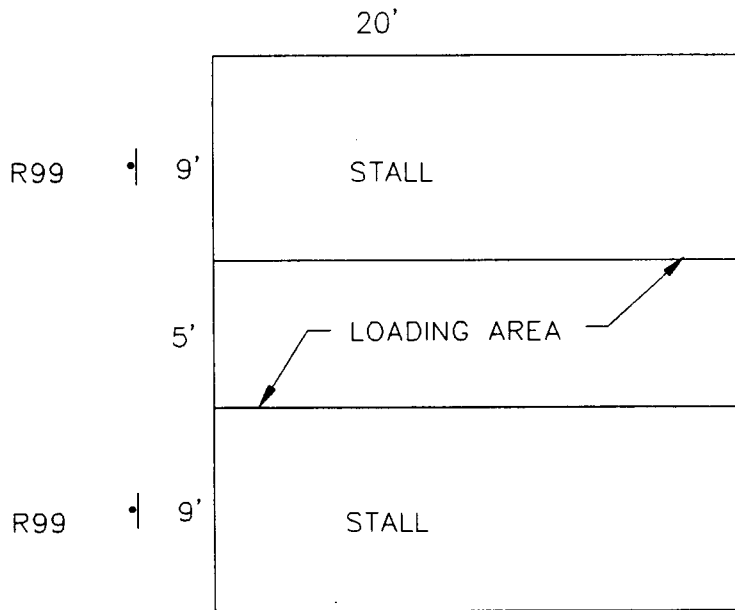
PARKING ANGLE & STALL WIDTH	STALL WIDTH PARALLEL TO AISLE (A)	STALL LENGTH OF LINE (B)	STALL DEPTH PERPENDICULAR TO WALL (C)	AISLE WIDTH (D)	STALL DEPTH TO INTERLOCK (E)	MODULES				BUMPER OVERHANG (I)	OFFSET (J)	SETBACK (K)	CROSS-AISLE ONE-WAY (L)	CROSS-AISLE TWO-WAY (L)	
						WALL TO INTERLOCK (F)	INTERLOCK TO INTERLOCK (G)	INTERLOCK TO CURB FACE (H)	WALL TO WALL (2C+D)						
45°	9.0'	12.7'	27.0'	19.1'	12.7'	15.9'	47.7'	44.5'	45.9'	50.9'	1.8'	6.4'	12.7'	14.0'	24.0'
	9.5'	13.5'	27.5'	19.4'	11.7'	16.1'	47.2'	43.9'	45.5'	50.5'	1.8'	6.7'	12.7'	14.0'	24.0'
	10.0'	14.1'	28.0'	19.8'	11.7'	16.3'	47.8'	44.2'	46.0'	51.3'	1.8'	7.1'	12.7'	14.0'	24.0'
60°	9.0'	10.4'	23.2'	20.1'	16.9'	17.8'	54.8'	52.5'	52.6'	57.1'	2.2'	2.6'	9.0'	14.0'	24.0'
	9.5'	11.0'	23.5'	20.3'	15.9'	18.0'	54.2'	51.8'	52.0'	56.5'	2.2'	2.7'	9.0'	14.0'	24.0'
	10.0'	11.5'	23.8'	20.6'	15.9'	18.1'	54.5'	52.0'	52.4'	57.1'	2.2'	2.9'	9.0'	14.0'	24.0'
75°	9.0'	9.3'	20.4'	19.7'	24.0'	18.5'	62.2'	61.1'	59.9'	63.4'	2.4'	0.6'	4.7'	14.0'	24.0'
	9.5'	9.8'	20.6'	19.8'	23.0'	18.6'	61.4'	60.2'	59.0'	62.6'	2.4'	0.6'	4.7'	14.0'	24.0'
	10.0'	10.4'	20.7'	20.0'	23.0'	18.7'	61.6'	60.3'	59.2'	63.0'	2.4'	0.6'	4.7'	14.0'	24.0'
90°	9.0'	9.0'	18.0'	18.0'	26.5'	18.0'	62.5'	62.5'	60.0'	62.5'	2.5'	0.0'	0.0'	14.0'	24.0'
	9.5'	9.5'	18.0'	18.0'	25.5'	18.0'	61.5'	61.5'	59.0'	61.5'	2.5'	0.0'	0.0'	14.0'	24.0'
	10.0'	10.0'	18.0'	18.0'	25.5'	18.0'	61.5'	61.5'	59.0'	61.5'	2.5'	0.0'	0.0'	14.0'	24.0'

**NOTES**

- 1 MARKINGS IN PARKING LOTS SHALL BE PAINTED WITH WHITE TRAFFIC LINE PAINT\* THAT MEETS CURRENT CALTRANS STANDARDS FOR HIGHWAY MARKINGS, EXCEPT FOR MARKINGS DENOTING HANDICAP PARKING SPACES WHICH SHALL BE BLUE IN COLOR. SEE HANDICAP PARKING DETAIL.  
\* (RAPID DRY WATER BORNE)
- 2 MINIMUM 2-WAY DRIVE AISLE WIDTHS SHALL BE 24' UNLESS BACKING WIDTH GOVERNS (SEE NOTE 3).
- 3 AISLE WIDTH (D) IS MINIMUM 1-WAY AISLE WIDTH REQUIRED FOR BACKING PURPOSES.

REVISED 7/27/89

APPROVED <i>[Signature]</i> CITY ENGINEER	SUBDIVISION DESIGN MANUAL		DATE 12/23/87
	PARKING SPACE DIMENSIONS		DRAWN B.J.D./G.E.G.
ENGINEERING DEPARTMENT	CITY OF BAKERSFIELD CALIFORNIA		CHECKED
			SCALE NTS
		SHEET NO. T-10	



NOTES

ALL MARKINGS SHALL BE PAINTED BLUE WITH PAINT THAT MEETS SECTION 504 OF THE FEDERAL "REHABILITATION ACT OF 1973". PAINT SHALL BE OF COMMERCIAL QUALITY FOR TRAFFIC MARKING PURPOSES AND SHALL BE COLOR #15090 (BLUE) OF THE FEDERAL COLOR STANDARD #595A.


HANDICAP SYMBOL PAINTED IN EACH STALL

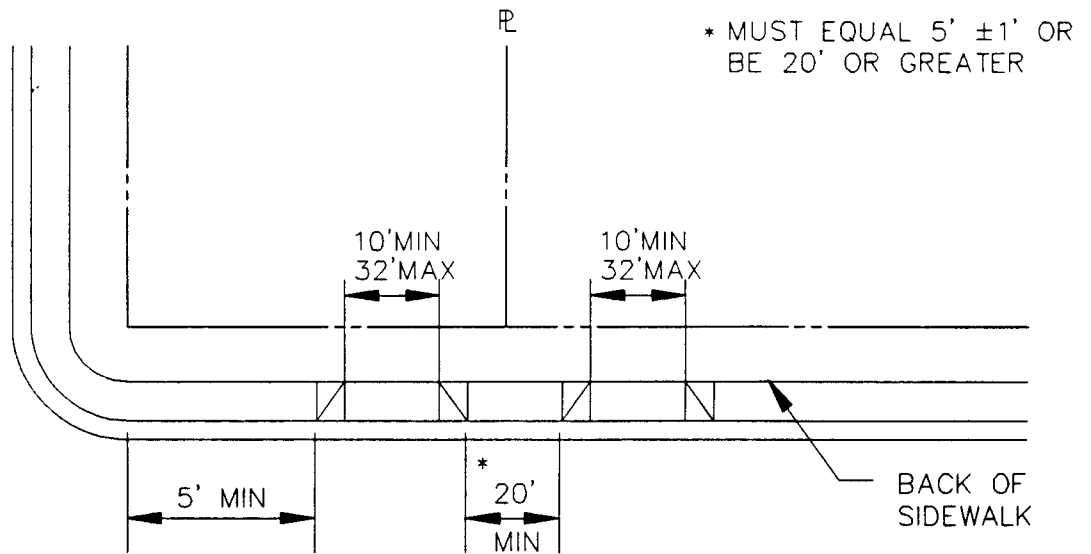
R99 HANDICAP PARKING ONLY SIGN SHALL BE PLACED AT END OF EACH STALL AND A SIGN CONFORMING TO SEC. 22511.8(d) OF THE VEHICLE CODE PLACED EITHER ADJACENT TO SPACE OR AT EACH ENTRANCE.

STALLS SHALL BE LOCATED SO NO DISABLED PERSON IS FORCED TO TRAVEL BEHIND VEHICLE OTHER THAN THEIR OWN.

TWO STALLS MAY SHARE A COMMON LOADING AREA.

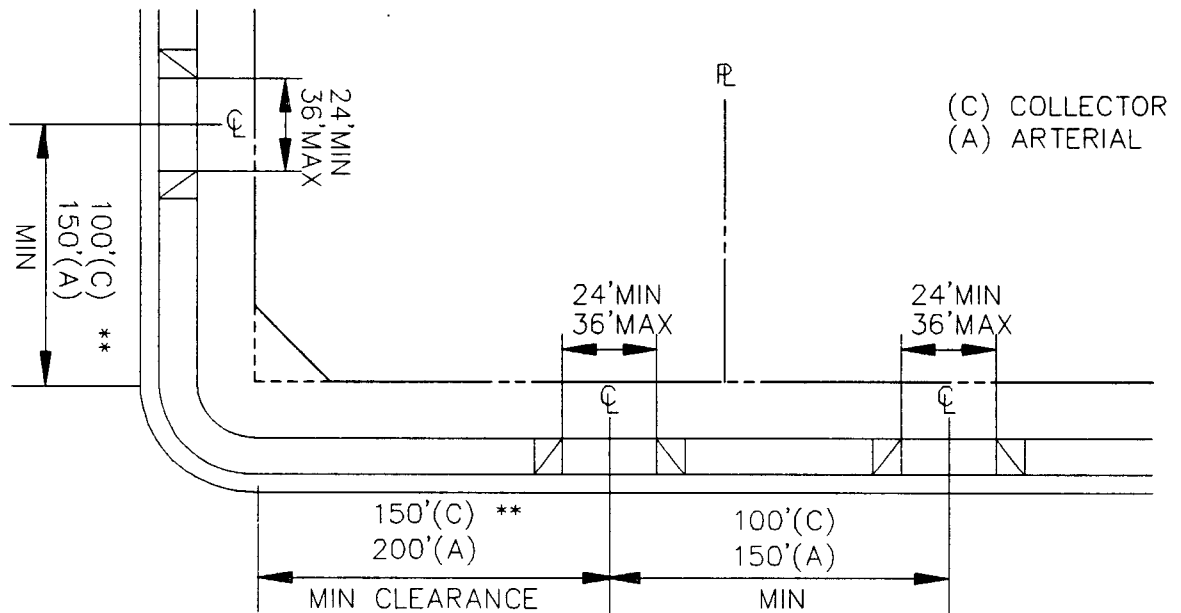
REVISED 10/17/89

	SUBDIVISION DESIGN MANUAL	DATE 7/27/89
	HANDICAP PARKING DETAIL	DRAWN BJD
APPROVED  CITY ENGINEER	CITY OF BAKERSFIELD CALIFORNIA ENGINEERING DEPARTMENT	CHECKED
		SHEET NO. T-11
		SCALE NTS



## SINGLE FAMILY

THIS STANDARD APPLIES TO SINGLE FAMILY RESIDENTIAL ACCESS ON LOCAL STREETS. FOR ARTERIALS AND COLLECTORS THE 5' DIMENSION FROM THE CORNER WILL BE 20'.

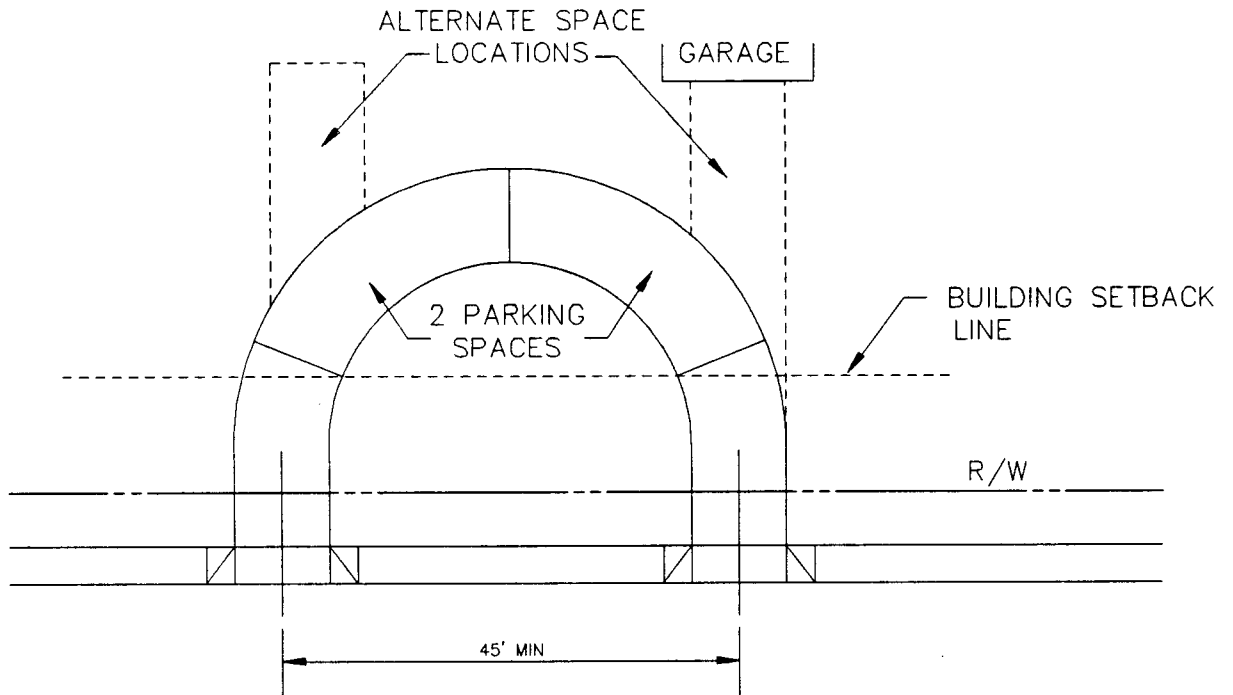


## NON SINGLE FAMILY

THIS STANDARD APPLIES TO ALL TYPES OF ACCESSES, EXCEPT SINGLE FAMILY, FOR MAJOR STREETS. THE 200' & 150' DIMENSION FROM THE CORNER MAY REQUIRE ADDITIONAL CLEARANCE FOR LEFT-TURN STORAGE. ACCESSES WILL NOT BE ALLOWED WITHIN TURN LANE TRANSITIONS.

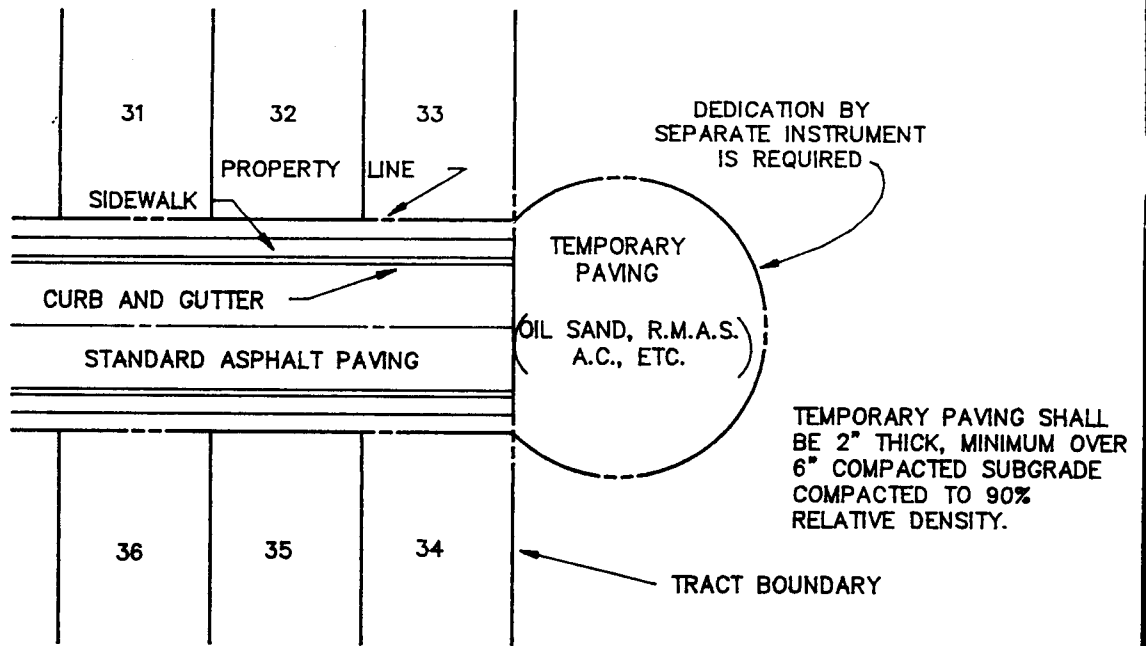
\*\* THESE CLEARANCES MAY BE REDUCED FOR LOW TRIP GENERATORS SUBJECT TO THE RECOMMENDATION OF THE TRAFFIC ENGINEER.

APPROVED  <i>E. W. [Signature]</i> CITY ENGINEER	SUBDIVISION DESIGN MANUAL  MINIMUM ACCESS DESIGN	DATE 7/27/89 DRAWN BJD CHECKED SCALE NTS SHEET NO. T-12
	CITY OF BAKERSFIELD CALIFORNIA ENGINEERING DEPARTMENT	



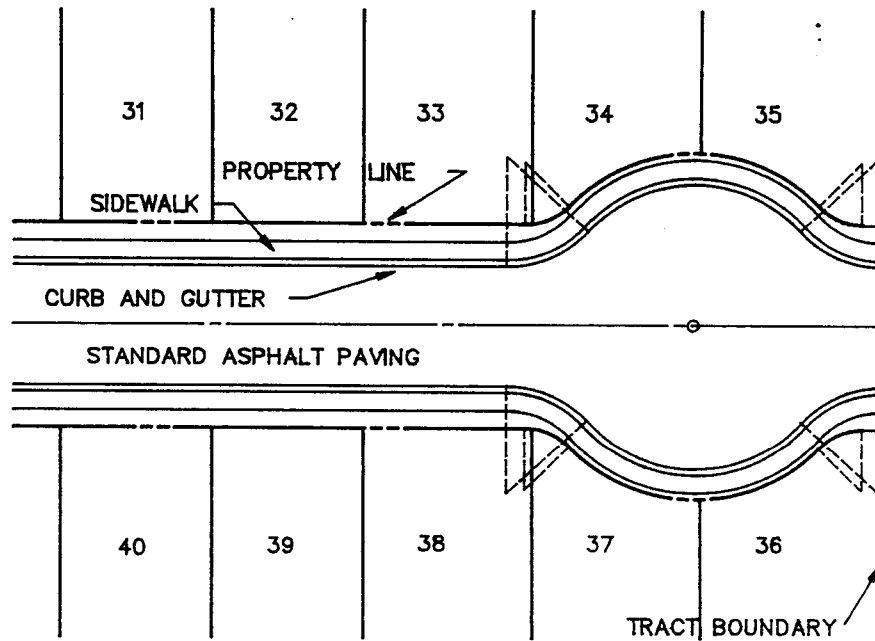
EACH DRIVE SHALL LEAD TO A STANDARD (9' x 18' MIN) PARKING SPACE BEHIND THE BUILDING SETBACK LINE. CIRCULAR DRIVEWAYS WILL ONLY BE ALLOWED WHERE LOT WIDTH IS SUFFICIENT TO PROVIDE MINIMUM SPACING OF 45' BETWEEN CENTER OF CONNECTING DRIVES. ALL OTHER STANDARDS SHALL ALSO APPLY.

	SUBDIVISION DESIGN MANUAL STANDARD REQUIREMENTS FOR CIRCULAR DRIVEWAYS	DATE	9/20/88
		DRAWN	BJD
		CHECKED	
		SCALE	NTS
APPROVED	CITY OF BAKERSFIELD CALIFORNIA	SHEET NO.	T-13
<i>E. Usala</i> CITY ENGINEER		ENGINEERING	DEPARTMENT



## OFF-SITE TURNAROUND

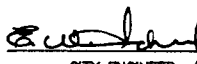
( REQUIRED WHEN THE TRACT AND  
OFF-SITE HAVE THE SAME OWNER )

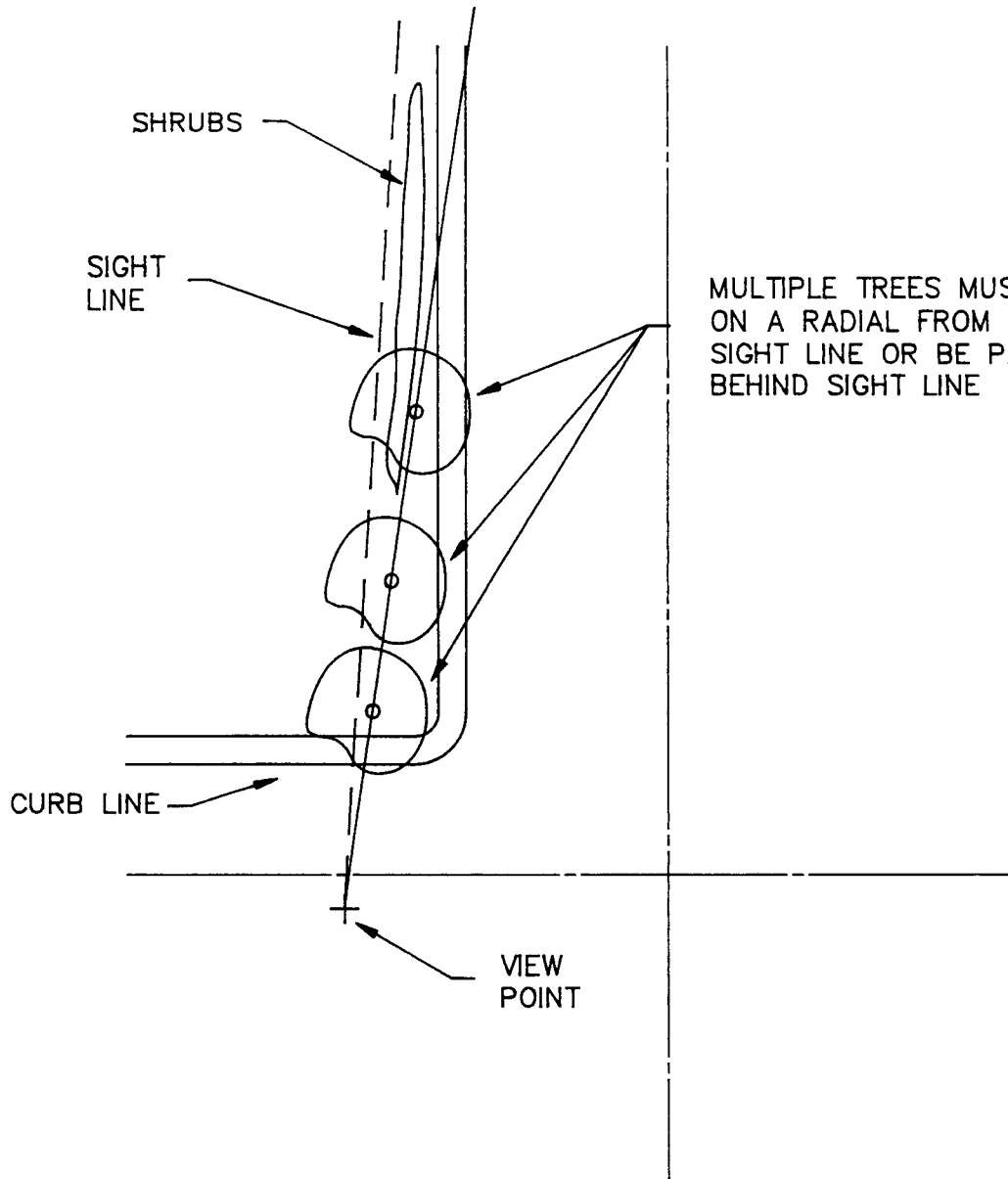


## ON-SITE TURNAROUND

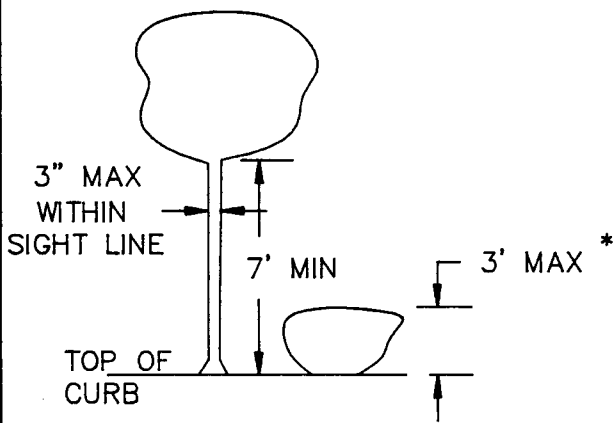
( REQUIRED WHEN THE TRACT AND  
OFF-SITE HAVE DIFFERENT OWNERS )

RADII ON CUL-DE-SACS SHALL  
CONFORM TO CITY STANDARD S-33.

APPROVED	SUBDIVISION DESIGN MANUAL	DATE 9/20/88
	SUBDIVISION TURNAROUNDS FOR STREETS TO BE EXTENDED	DRAWN BJD
 CITY ENGINEER	CITY OF BAKERSFIELD CALIFORNIA	CHECKED
		SCALE NTS
ENGINEERING	DEPARTMENT	SHEET NO. T-14




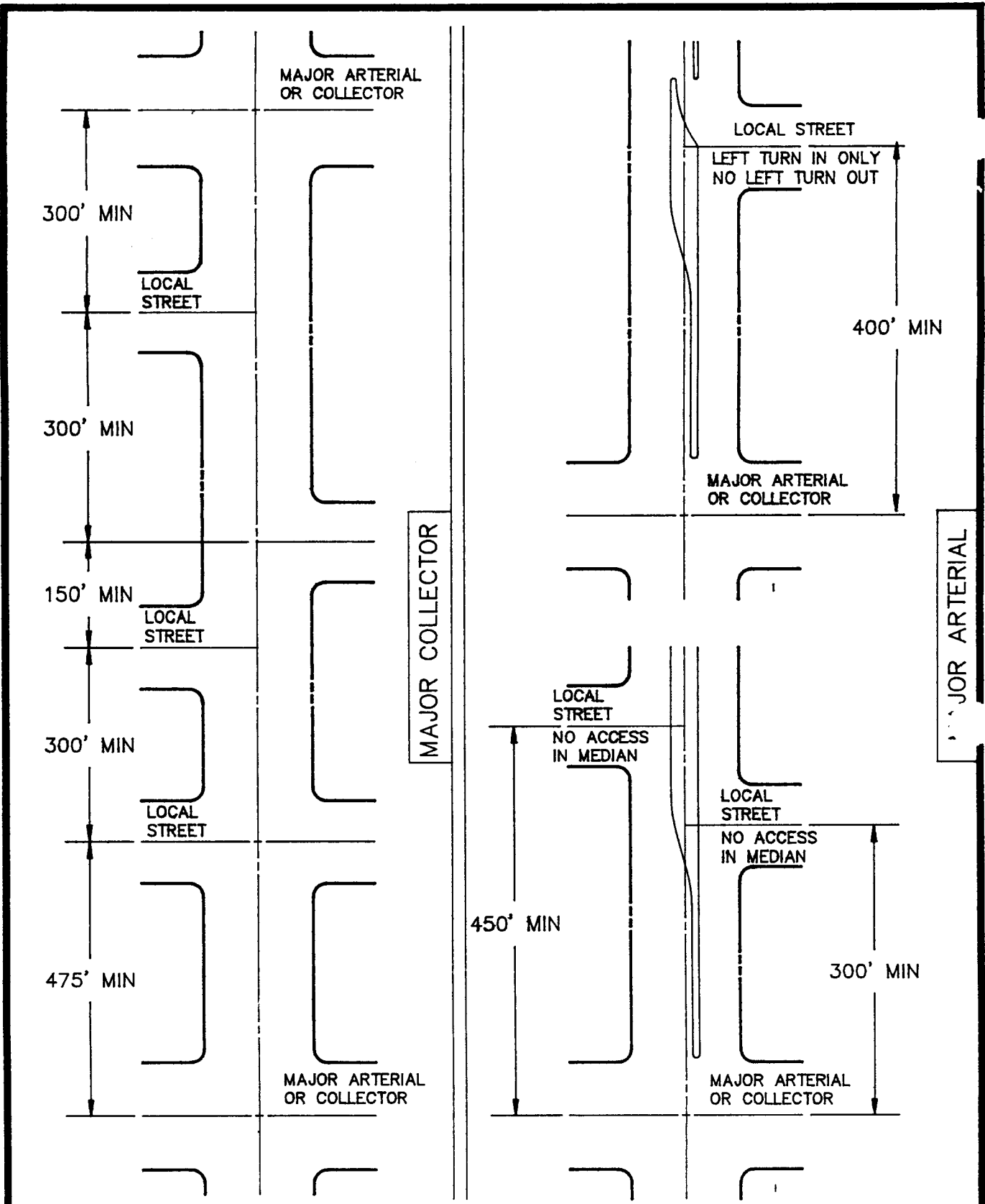
MULTIPLE TREES MUST BE ON A RADIAL FROM THE SIGHT LINE OR BE PLACED BEHIND SIGHT LINE




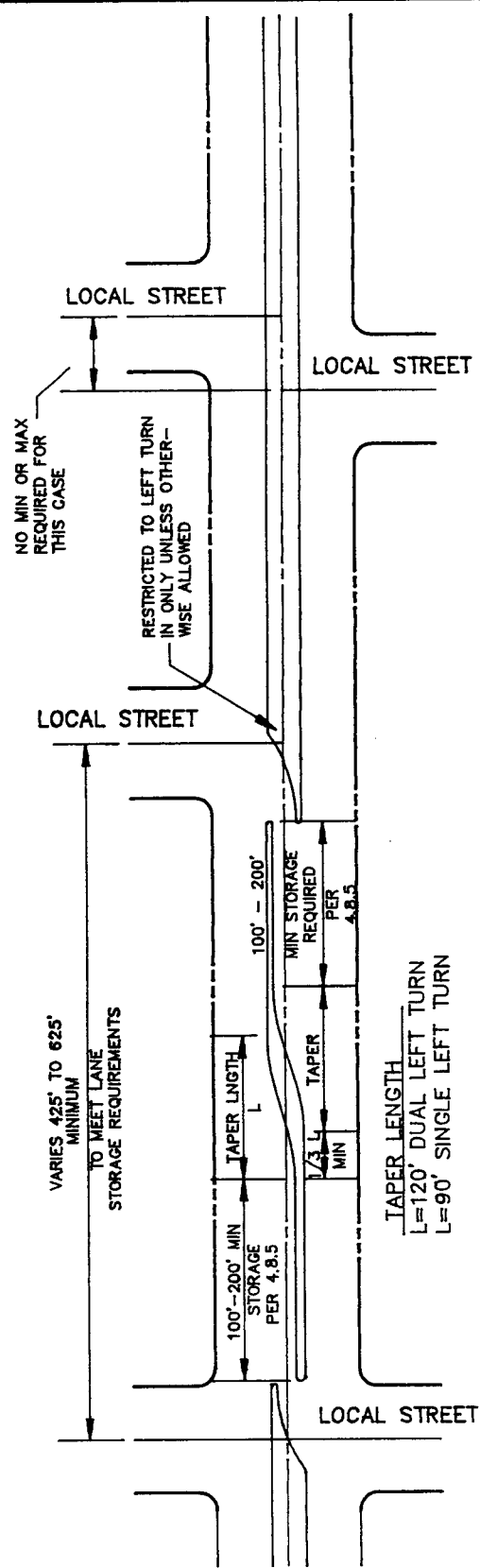
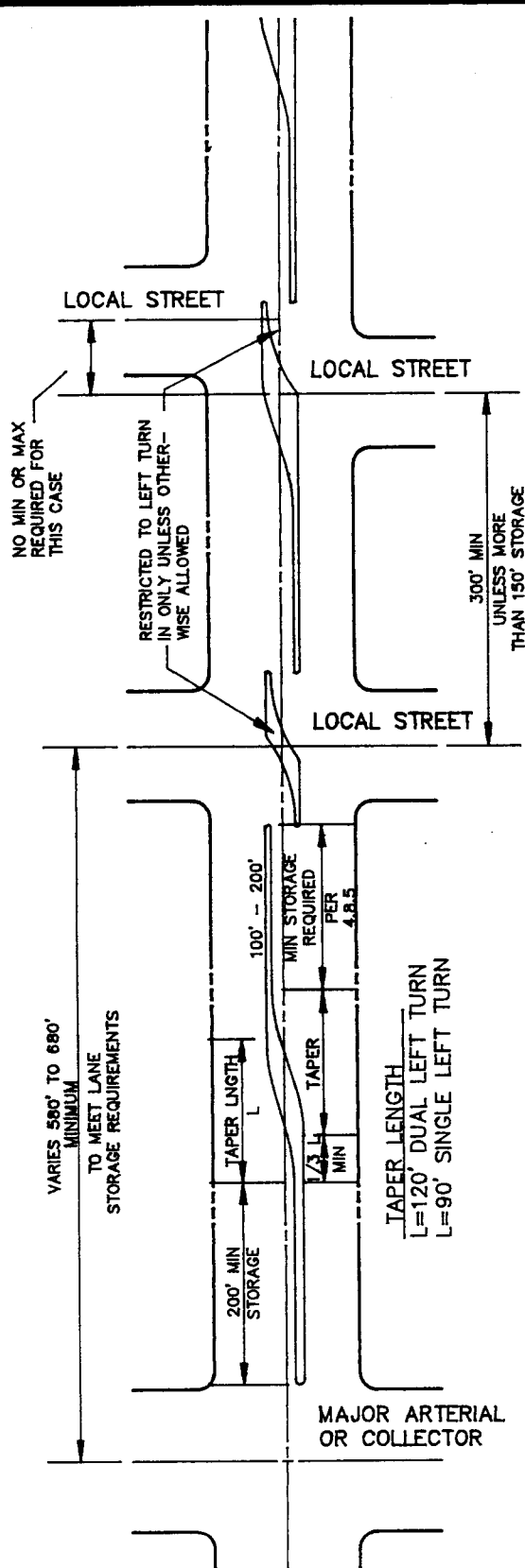
TREES AND SHRUBS WITHIN SIGHT LINE AND TREES OVER SIDEWALKS SHALL CONFORM TO THE DETAIL BELOW. SIGHT LINE AND VIEW POINT LOCATION SHALL CONFORM TO SECTION 17.08.175 OF THE MUNICIPAL CODE.

\* MEASURE FROM GUTTER FLOWLINE FOR SOLID OBJECTS, I.E. FENCES, WALLS, ETC.


APPROVED	SUBDIVISION DESIGN MANUAL	DATE 9/20/88
	TYPICAL SIGHT LINE REQUIREMENTS FOR LANDSCAPING	DRAWN BJD
 CITY ENGINEER	CITY OF BAKERSFIELD CALIFORNIA	CHECKED
	ENGINEERING DEPARTMENT	SCALE NTS
		SHEET NO. T-15

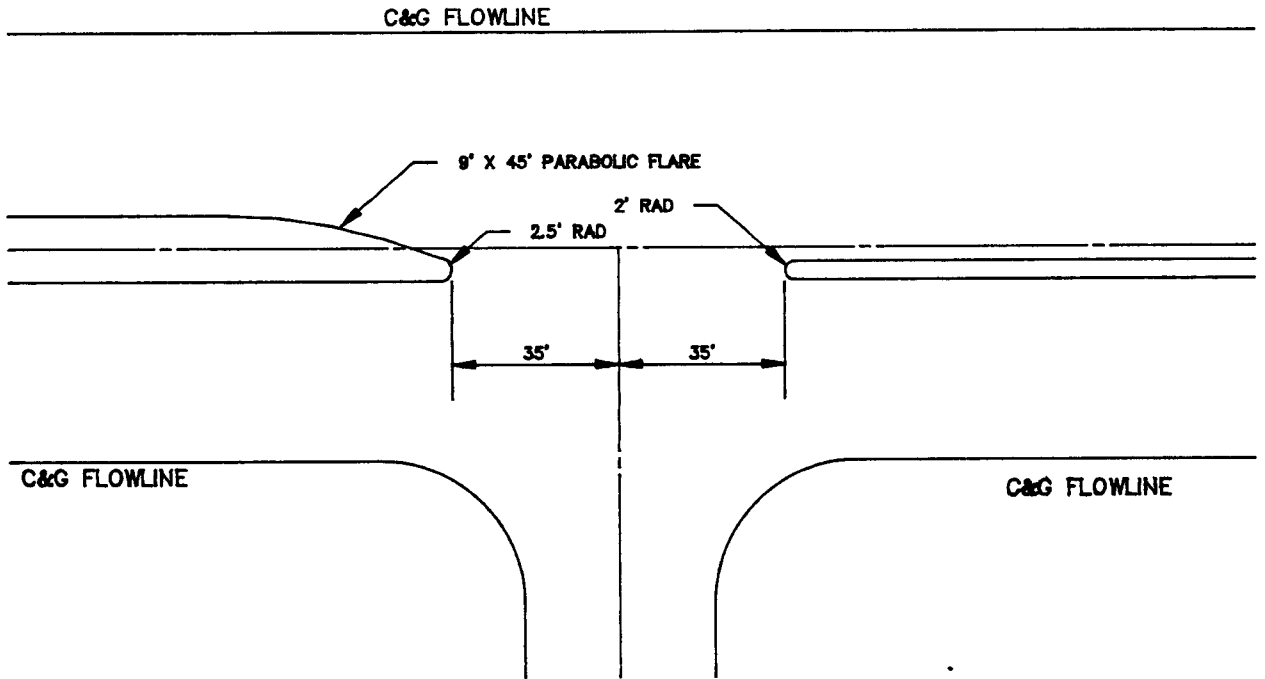


APPROVED	SUBDIVISION DESIGN MANUAL		DATE
	MINIMUM STREET ACCESS SPACING ON MAJOR STREETS		7/25/89
 CITY ENGINEER	CITY OF BAKERSFIELD CALIFORNIA		DRAWN
	ENGINEERING DEPARTMENT		BJD
			CHECKED
		SCALE	NTS
		SHEET NO.	T-16



NOTE: NUMBER OF ACCESS PTS. SHOWN TO ARTERIAL STREETS IS FOR ILLUSTRATIVE PURPOSES ONLY TO COVER TYPICAL ACCESS CONFIGURATIONS. ARTERIALS ARE PRIMARILY DESIGNED FOR MOVEMENT OF THROUGH TRAFFIC AS INDICATED SEC. 4.8.3. ACCESS POINTS TO ARTERIAL STREETS SHALL BE MINIMIZED TO THE GREATEST EXTENT POSSIBLE.

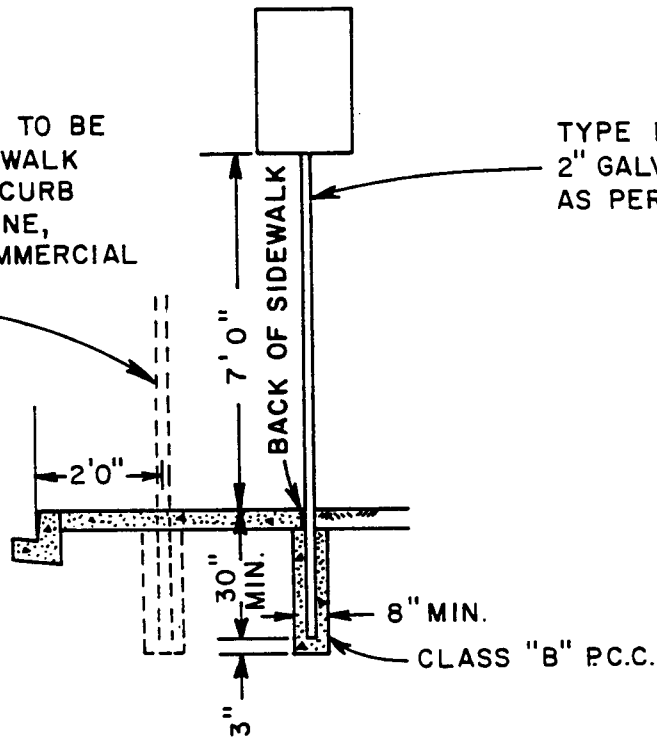
SUBDIVISION DESIGN MANUAL MINIMUM STREET ACCESS SPACING ON MAJOR STREETS		DATE	7/25/89
		DRAWN	BJD
APPROVED  CITY ENGINEER		CHECKED	
		SCALE	NTS
		SHEET NO.	T-17
CITY OF BAKERSFIELD CALIFORNIA ENGINEERING DEPARTMENT			



TYPICAL MEDIAN END DETAIL FOR  
 INTERSECTION OF LOCAL STREET WITH ARTERIAL STREET  
 HAVING FULL ACCESS IN ALL DIRECTIONS

	SUBDIVISION DESIGN MANUAL	DATE 7/25/89
	TYPICAL MEDIAN END DETAILS AT INTERSECTIONS WITH LOCAL STREETS	DRAWN BJD
APPROVED	CITY OF BAKERSFIELD CALIFORNIA	CHECKED
<i>E. J. [Signature]</i> CITY ENGINEER		SCALE N.L.
ENGINEERING	DEPARTMENT	SHEET NO. T-18

ALTERNATE LOCATION TO BE USED WHEN THE SIDEWALK EXTENDS FROM THE CURB TO THE PROPERTY LINE, PARTICULARLY IN COMMERCIAL AREAS.



TYPE B.S.S.  
2" GALVANIZED PIPE  
AS PER AMERICAN FENCE CO.

APPROVED  
*[Signature]*  
CITY ENGINEER

RECORDED \_\_\_\_\_ 19\_\_\_\_  
IN BOOK \_\_\_\_\_ AT PAGE \_\_\_\_\_  
OFFICIAL RECORDS OF  
KERN COUNTY, CALIFORNIA

MISCELLANEOUS SIGN  
DETAIL

CITY OF BAKERSFIELD  
CALIFORNIA

ENGINEERING DEPARTMENT

T-19

DATE 12/05/85  
DRAWN G.F.G.  
CHECKED S.L.W.

