

BEFORE THE BOARD OF PACIFIC COUNTY COMMISSIONERS
PACIFIC COUNTY, WASHINGTON
RESOLUTION NO. 99-089

A RESOLUTION ADOPTING NEW ROAD STANDARDS AND REPEALING OUTDATED RESOLUTIONS

WHEREAS, Pacific County needs updated Road Standards to effectuate the purposes of Ordinance No. 149 which pertains to land divisions; and

WHEREAS, Pacific County Road Standards were promulgated in Board of Commissioners Resolution No. 83-195; and

WHEREAS, Pacific County has regulated the development of roads through Board of County Commissioners Resolution No. 79-60 and the Pacific County Road Standards; and

WHEREAS, Pacific County has regulated curb and sidewalk improvements in Seaview and Ocean Park through Board of Commissioners Resolution No. 86-017; and

WHEREAS, all of the documents listed above need to be integrated; and

WHEREAS, the Administrator of Ordinance No. 149 in consultation with the County Engineer has formulated a new Road Standards Manual and recommends approval of this document; and

WHEREAS, no adverse comments have been received as part of the SEPA process pertaining to the updated Road Standards; now therefore

IT IS HEREBY RESOLVED pursuant to the authority conveyed in Subsection 3.I of Pacific County Ordinance No. 149 that Exhibit "1" is adopted as the new Pacific County Road Standards; and

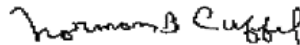
IT IS FURTHER RESOLVED that Board of Commissioners Resolution No. 79-60 and Resolution No. 83-195 (which encompasses the previous version of the Pacific County Road Standards), and Resolution No. 86-017 are hereby repealed.

DATED THIS 24th DAY OF August, 1999.

BOARD OF COUNTY COMMISSIONERS
PACIFIC COUNTY, WASHINGTON



Chairman



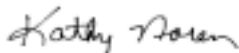
Commissioner



Commissioner

APPROVED AS TO FORM:

ATTEST:



Clerk of the Board

PACIFIC COUNTY



ROAD STANDARDS

EXHIBIT "1"

Pacific County

Road Standards

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ROAD STANDARDS

1.00 INTRODUCTION

The purpose of these standards is to provide standardized road design and construction elements for consistency and to ensure, so far as practical, that minimum requirements of the motoring public are met. These requirements include safety, convenience and economical maintenance.

These standards are not intended to provide for all situations but to be flexible in form or content. They are intended to assist, but not substitute for, competent work by design professionals. It is expected that land surveyors, engineers, architects, and contractors will bring to each project the best of the skills from their respective disciplines and trades.

These standards are also not intended to unreasonably limit any innovative or creative effort. However, any deviations from these road standards are subject to the approval of the County Engineer based on satisfactory evidence that the proposed variance will produce a equivalent facility.

2.00 GENERAL CONSIDERATIONS

2.01 Shorten Designation

These Road Standards shall be cited as the "standards."

2.02 Applicability

These standards shall apply to all design and construction required within county right of way, proposed right of way, accesses thereto, and utility work within rights of way. These standards shall also govern all design and construction within private easements as provided herein or as provided by county regulations.

2.03 Exemptions

These standards shall not apply to the following:

- A. Logging roads, agricultural roads, or private roads intended for the sole use of the owner or developer.
- B. Maintenance work within county rights of way by county forces.
- C. Temporary repairs made on an emergency basis.

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- D. Reconstruction, rehabilitation, and resurfacing (3R Standard) as defined in the "Local Agency Guidelines" Chapter 42.

2.04 Interpretation and Enforcement

Interpretation and enforcement of these standards shall be the responsibility of the County Engineer or designated representative.

2.05 Adopted Pacific County Specifications

Except where these standards provide otherwise, or by contract with Pacific County, all design and construction, including materials, shall be in accordance with the relevant sections of the following:

- A. "Standard Specifications for Road, Bridge, and Municipal Construction" (latest edition) published by Washington State Department of Transportation amended as follows:
 - 1. The term "Commission" or "Washington State Highway Commission" shall be interpreted to mean "Board of Pacific County Commissioners."
 - 2. The term "Department" or "Department of Transportation" shall be interpreted to mean "Pacific County Department of Public Works."
 - 3. The term "Secretary" or "Secretary of Transportation," shall be interpreted to mean the "County Engineer."
 - 4. The term "Engineer" shall be interpreted to mean the "County Engineer" or duly authorized representative(s).
 - 5. The term "State" shall be interpreted to mean "Pacific County acting through its authorized representative(s)."
 - 6. The term "Contractor" shall also be defined as "Individuals or Corporations constructing roads within Pacific County."
 - 7. Sections 1-02 through 1-10 inclusive of Division 1 are deleted in their entirety, excluding Public Works projects. Section 1-01, entitled "Definition of Terms," shall be retained.
- B. "Standard Plans for Road, Bridge, and Municipal Construction" (latest edition), published by Washington State Department of Transportation.
- C. "Manual on Uniform Traffic Control Devices", published by The U.S. Department of Transportation, (latest edition) as amended and approved by the Washington State Highway Commission.

2.06 Other Specifications

The following specifications may be followed when specifically cited by these road standards, or in the absence of specific standards when applicable and approved by the County Engineer.

- A. "Washington Chapter American Public Works Association Standard

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- Specification for Municipal Public Works Construction," (latest edition), referred to as the "APWA Standard Specifications."
- B. "Standard Specifications for Highway Bridges, " (latest edition), adopted by the American Association of State Highway and Transportation Officials, referred to as the "AASHTO Bridge Specifications."
- C. "Washington State Department of Transportation Design Manual, "(latest edition), referred to as the "WSDOT Design Manual."
- D. "Washington State Department of Transportation Hydraulic Design Manual," (latest edition), referred to as the "WSDOT Hydraulic Design Manual."
- E. Washington State Department of Transportation "Local Agencies Guidelines", (latest edition).
- F. "A Policy on Geometric Design of Rural Highways 1965," published by AASHTO.
- G. "Highway Capacity Manual," published by Highway Research Board.
- H. "Action Guide Series", (latest edition), published by the National Association of County Engineers.

3.00 ROAD TYPES AND GEOMETRICS

The primary considerations used in determining the type of road are location, traffic volume and function. Section 4.00 and Appendices A through G shall be used to determine the minimum roadway standard.

For convenience, a list of major and minor collectors is contained in Appendix B. Before using the appendix, the classification of a particular road or right of way should be verified with the County Engineer.

3.01 Functional Classifications in Rural Areas

The following are road or right of way classifications based on the anticipated Average Daily Traffic (ADT) ten years hence:

- A. Access Collector (ADT 0 to 400, See Appendix C)
- B. Minor Collector (ADT 400 to 2000, See Appendix D)
- C. Major Collector (ADT 2000+, See Appendix E)
- D. Private Road (See Appendix F)
- E. Unmaintained County Right of Way (See Appendix G)

3.02 Typical Roadway Design Standards for New Construction

To obtain the geometric design for roads, first determine the traffic generation, then see applicable design and construction standard in Appendices A through G.

3.03 Cul de Sacs/Turn Aroun

- A. A cul de sac is required on any dead end access road serving two (2) or more parcels, or an approved turn around for driveway access roads in excess of

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- three hundred (300') feet.
- B. Minimum right of way diameter is ninety (90') feet for cul de sacs.
- C. Minimum pavement width is seventy (70') feet in diameter.
- D. For typical cul de sac, see Appendix H.

3.04 Dedications

- A. Road right of way shall be a minimum of sixty (60') feet to accommodate transportation requirements, parking, utility and buffer requirements. Right of way widths less than sixty (60') feet may be required where geometric or physical factors warrant.
- B. Easements shall be provided for all public facilities as required.
- C. Additional right of way may be required to be dedicated as a condition of development approval. In order to conform to minimum standards where developments abut an existing public road or private right of way, dedications may be required for extension of existing public roads or new roads to provide continuity with the circulation system.

3.05 Intersections/Turn Lanes/State Highway Connections

Intersections and turn lane design shall be submitted to the County Engineer for review and approval. Intersection design for Access Collector or Minor Collector is as shown in Appendix I. Intersection design for Major Collectors or at such other locations as determined by the County Engineer is as shown in Appendix J.

Construction of turning lanes (either left or right) may be required as determined by the County Engineer. Turning lane design shall be in accordance with plans approved by the County Engineer.

All costs including right of way acquisition, utility relocation, and/or construction of intersections or turn lanes required as a result of a proposed development shall be the sole responsibility of the developer.

The design of any proposed county road that intersects with a state highway shall be submitted to the County Engineer for approval.

Washington State Department of Transportation approval of the proposed design must be received prior to development approval or start of construction. Improvements to the state highway are to be the sole responsibility of the developer and the Washington State Department of Transportation.

3.06 Railroad Grade Crossing

All proposed railroad crossings on dedicated right of way must be submitted to the County Engineer prior to being forwarded to the Railroad and the Utilities and

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Transportation Committee for approval. Additional railroad crossings will not be approved if alternate access is available.

3.07 Traffic Control

- A. Signs and Pavement Marking: In subdivisions or commercial developments, signs and/or pavement marking may be required to provide roadway safety. All costs of such signs and markings shall be borne by the developer.
- B. All construction and permanent signing shall be the responsibility of the developer and shall conform to the Manual on Uniform Traffic Control Devices.
- C. Traffic Control Plan shall be approved by the County Engineer prior to construction.

4.00 TRAVEL GENERATION

All development permit applications shall include sufficient data to determine the amount of additional traffic generated by the development. Such data shall be used as a guideline for access road and/or driveway requirements. In addition, high impact development, as defined in Subsection 4.02 may require a traffic study as determined by the County Engineer.

4.01 Travel Generation Guidelines

The guidelines shown in Appendix A will be used for an impact assessment of the proposed development. If the developer has additional information which would warrant a deviation from these guidelines, it shall be provided to the County Engineer for review.

4.02 High Impact Land Use

A traffic study is required for any developments which the County Engineer feels may create one of the following conditions:

- A. Developments served by road systems which are at or appear that, following development will be at or below the level of service "D" during peak hour, as defined by the Highway Capacity Manual.
- B. Developments which may cause hazardous traffic or road conditions or aggravate known hazardous traffic or road conditions.
- C. Individual circumstances will also be considered that may justify a variation from the procedures contained herein, where to do so will further the purposes of these standards.

4.03 Development Resulting in Excessive Municipal Expenditures

Since developments will ordinarily be participating in a portion of the cost of improvements, funding of complete improvements may take several years to become available. In the event the location or nature of a proposed development would

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necessitate an excessive expenditure of public funds to meet the anticipated road needs, Pacific County may deny approval of the development. As an alternative, the developer may modify the proposal so that the need for road improvements is lessened, or decide to bear all or more than a proportionate share of the road improvement cost which Pacific County cannot reasonably finance.

4.04 Traffic Study

- A. A traffic study may be required by the County Engineer in order to provide sufficient information to assess the impact on the transportation system and level of traffic service. This decision will be based upon the size of the proposed development, availability of previous studies in the same area, existing roadway condition, traffic volumes, accident history, expressed community concern and other factors relating to transportation.
- B. Traffic studies shall be conducted by a qualified individual or firm acceptable to the County Engineer. Studies involving the use of expert opinion or analysis beyond a cursory compilation of available data and traffic projections shall be conducted by a design professional with experience in traffic engineering.
- C. The level of detail and scope of a traffic study may vary with the size, complexity and location of the proposed development. The traffic study shall contain a thorough review of both the short and long-range impacts of the proposed development on the transportation system, and shall include the basic data shown in Appendix A. The County Engineer may also require that the traffic study include other information necessary for a thorough review of the impacts of the proposed development on the transportation system.

4.05 Mitigation Plan

The County Engineer will review the traffic study to determine if the development is a high impact development. If the County Engineer determines that the development is high impact, the developer shall be notified in writing. The developer will be afforded the opportunity to provide the County Engineer with a mitigation plan to lessen the impact of the development.

5.00 ROADWAY BASES AND SURFACING

5.01 General Requirements

All base and surfacing shall be in accordance with the Washington State Department of Transportation Standard Specifications.

5.02 Subgrade Requirements

Any evidence of instability in the subgrade soils as indicated by water content, springs, fine grained or organic soils, slides or settlement (but not limited to the

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aforementioned) shall be evaluated by a qualified professional and resolved to the satisfaction of the County Engineer prior to the start of construction. If necessary, the material shall be sampled and tested sufficiently to establish load bearing capacities for the proposed construction methods. Both the soils analysis and the resulting roadway design shall be subject to review and approval by the County Engineer.

6.00 CONSTRUCTION PLANS AND STAKING

When construction of roads is required, the developer shall provide a set of construction plans. The plans shall be prepared and submitted for review to the County Engineer. Final plans and profile drawings must be approved by the County Engineer prior to start of construction.

6.01 Submittal Procedure

Plan sheets and profile sheets or a combined plan and profile sheet, and detail sheets shall be good quality reproducibles, mylar or equal, all in sheet sizes twenty-four by thirty-six (24" by 36") inches.

- A. First submittal shall be two (2) sets of prints from of the plan and profile, showing all utilities, drainage, drainage plan and other related facilities and detail sheets. One (1) set of drainage calculations shall be included with the submittal. Temporary erosion and sedimentation control details may be incorporated with either the road plans or the drainage plans. A grading and erosion sedimentation control plan, as required, may be incorporated in either the road plans or drainage plans, or may be submitted separately in two (2) full sets. If corrections are required, one (1) set of check prints will be returned to the developer.
- B. Subsequent submittal shall be a complete set of original plans, two (2) complete sets of prints, and one (1) set of corrected calculations, and one (1) set of the check prints and calculations. Upon final design approval by the County Engineer, the original set of plans will be signed and returned to the designing engineer.
- C. Final submittal shall be one (1) complete set of reproducible mylar or equal copies of the approved plans and two (2) complete sets of prints of the approved plans acceptable to the County Engineer.
- D. The approval of the construction plans shall be effective for two (2) years. It may be extended in writing at the option of the County Engineer. Prior to granting an extension, the plans shall be revised to comply with current standards.
- E. "As-built" drawings shall be submitted prior to final acceptance of any road, structure or facility for maintenance by Pacific County. One (1) complete set of reproducible copies with the corrected plans acceptable to the County Engineer, shall be submitted. Such drawings shall describe any and all revisions or additions to the approved plans. In addition, the designing

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engineer and/or developer shall submit a letter of certification stating that the work and materials were inspected and were in conformance to the "as-built" plans submitted.

6.02 Plan Elements

Plan elements shall include the following:

- A. A vicinity map shall be drawn on the cover sheet in an appropriate scale to show the proximity of the project to major roadways, cities or towns. Indicate project location with regard to Section, Township, and Range.
- B. Road alignments with 100-foot stationing, reading from west to east or south to north, and stationing at points of curve, tangent, and intersections with ties to sections and/or quarter corners, or Grassline Survey monuments in the vicinity of the development.
- C. Retractable bearings and distances on center lines based on the section subdivision.
- D. Curve data, degree of curve, radius, delta, arc length and tangent distances on all horizontal curves.
- E. Right of way lines and width of proposed road and intersection.
- F. All topographic features with right of way limits and sufficient area beyond to resolve questions of setback, slope, drainage, access onto abutting property, and road continuations. A minimum of fifty (50') feet shall be shown on either side of center line and a minimum of two-hundred (200') feet shall be shown from the end of the road.
- G. All existing and proposed utility locations.
- H. Identification of all proposed roads, existing roads, subdivisions, property ownerships and easements.
- I. All traffic control and street signing locations.
- J. Existing and proposed drainage, indicating direction of flow, size, and kind of each drainage channel, pipe, and structure and other requirements as specified by the County Engineer.
- K. Scale one inch equals 50 feet (1"=50'). However, one inch equals one hundred feet (1"=100') may be acceptable for large lot developments. Details may be shown on convenient scale.
- L. When the plan view extends over more than one sheet, the first sheet shall show an overall developmental layout, with the relationship of roads, utilities, drainage, lots, and other features clearly indicated, including roads. When more than five (5) sheets, the first sheet shall show a table of contents and index sheet.
- M. Typical roadway sections of proposed road plus functional road classifications.
- N. An erosion/sedimentation control plan, showing the location and control measures intended to minimize the effects of erosion due to construction

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- operations shall be submitted.
- O. The general notes shall list the specification and design standards.
- P. Other data necessary for the specific project.

6.03 Profile Elements

Profile elements shall include the following:

- A. Original ground line along center line and right of way lines at one hundred (100') foot stations and at significant topographic features. When a road extends to the perimeter of the project, ground lines shall be extended at least two hundred (200') feet to show any changes in contour which might affect the profile of the proposed road.
- B. Final road, sewer, water and storm drainage profile.
- C. Road profiles shall be clearly labeled generally to show center line except as required by the County Engineer. Values for grade and length of vertical curve shall be shown with the profiles on a numbered grid.
- D. Super elevation data is required and shall be included.
- E. A profile of the returns showing the stations and elevations, the beginning, midpoint, and ending.
- F. Data used on all benchmarks will refer to established control.
- G. Vertical scale one inch equals five feet (1"=5'). Vertical scale may be one inch equals ten feet (1"=10') if the optional horizontal scale is used.

6.04 Typical Cross-Section

- A. Widths of pavement, ditch and rights of way.
- B. Type of sub-grade soil(s) and type and depth of base and surfacing.
- C. Slope of crown and ditch design.
- D. A separate, full-width roadway typical section for each road or portion of road having a different section.
- E. All other data necessary for a specific project.

6.05 Drainage Plan

The drainage plan shall be submitted with the above plan and profile for the road design or on separate sheets. In either case, the drainage plan shall include runoff calculations keyed to topographic maps, location, specific size, grade, and elevation data on all hydraulic features, and facilities for retention and/or detention if applicable. See Appendix K for typical drainage details.

6.06 Construction Staking

In order to ensure that design is carried through to the final product, construction staking by a qualified individual is required. Staking will consist of the following as a minimum:

- A. Slope Stake Sub-Grade

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- B. Top Base
- C. Top Course
- D. Drainage

7.00 ROADSIDE FEATURES

7.01 Side Slopes

- A. Side slopes shall be constructed no steeper than 1-1/2:1 on fill slopes and 1:1 on cut slopes. Flatter slopes are preferred and may be required if there are indications that the soil conditions are unstable and subject to sliding or blowing.
- B. Side slopes shall be stabilized by seeding or by other planting or surfacing materials acceptable to the County Engineer.

7.02 Approach Roads/Driveways

- A. All approach roads and driveways shall have a Pacific County access permit. Construction shall not be allowed before issuance of the permit. See Appendix L for typical designs.
- B. Residential driveways are those serving less than five (5) single family dwelling units. All others shall be considered commercial.
- C. Driveway widths and locations are determined at the time of acquisition of access permit. As a rule driveway widths are: Residential driveways minimum width fourteen (14') feet. Commercial driveways minimum width is twenty-eight (28') feet.
- D. An access plan shall be submitted for all proposed development for review by the County Engineer. The following guidelines shall be followed for developments using a county road for access from individual lots:
 - 1. Design Standard:
 - Major Collectors. Internal collection of traffic will be achieved wherever possible. The number of access points shall be a function of traffic volume on the major collector, but generally they shall not exceed one (1) access point per nine (900') hundred feet of frontage.
 - Minor Collectors. The same general guidelines apply as major collectors. The maximum number of access points shall be (1) access point per seven (700') hundred feet.
 - Local Access. Internal collection of traffic desirable. Individual driveways will be allowed for roads with 150 ADT or less including projected traffic from development. For roadways with 150 to 400 ADT, individual driveways may be allowed. Roadways with 400 to 1000 ADT will meet the provisions of minor collectors. Roadways with greater than 1,000 ADT will meet the provisions of major collectors.

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Private and Unmaintained County Right of Way. The requirements will be determined by the County Engineer based on the proposed development, the potential for the development, and future road and traffic considerations.

2. Access roadways or driveways will be located to provide the following minimum sight distance:

Existing Speed Limit	Sight Distance
50*	450'
40	320'
30	200'

*This value shall be used for major and minor collectors regardless of existing speed limit unless prior approval is obtained from the County Engineer.

3. Driveways and accesses will approach the county road at ninety degrees (90°) or as close as possible. In no case will an approach angle of sixty degrees (60°) or less be permitted.
4. Requests for approach roads/driveways giving access directly onto major and minor collectors may be denied if alternate access is available.
5. All abandoned driveways shall be removed and the shoulders and ditch sections shall be properly restored.
6. Maintenance of approach roads/driveways shall be the responsibility of the owner whose property they serve.
7. Each approach road/driveway must provide access to an off-road private parking area. Each vehicle entering the driveway must be able to park, stand, or load entirely off the right of way. For any approach road/driveway off a major collector, an adequate turnaround area shall be provided so that vehicles exit the property in a forward direction.
8. No approach road/driveway shall be allowed to access a public or private parking area in conjunction with industrial, commercial, multiple family dwelling, or any use that requires a vehicle to back onto any street.
9. No approach road/driveway shall be constructed in such a manner that restricts existing drainage or constitutes a hazard to a street lighting standard, utility pole, traffic control device, fire hydrant, or other public facility. Relocation shall be arranged through the agency involved and the cost shall be borne by the developer.
10. Approach road/driveway materials shall be approved by the County Engineer.
11. All surface drainage must be contained and directed to adequate drainage facilities. No surface drainage shall flow onto a county road surface. The approach road/driveway shall have a slope of two

percent (2%) toward the ditch from its connection with the county road.

12. Culverts.

(a) Length. The length of culvert required for approach road/driveway construction is dependent upon the width of the approach road/driveway and the ditch depth and shall be determined during the process of issuing an Access Permit. However, no approach road/driveway culvert shall be less than twenty (20') feet long.

(b) Diameter. Culvert diameter depends upon the amount of drainage to be handled and will be determined during the process of issuing a permit or, in the case of a new development, by the design engineer. However, the minimum diameter approach/road culvert shall be twelve (12") inches.

(c) Material. The following new or like new materials may be used for driveway culverts:

(I) Concrete Pipe

(II) Galvanized Corrugated Steel or Corrugated Aluminum. Minimum 16 gauge with reinforced end sections as provided by the pipe manufacturer.

(III) Other.

Subject to approval by the County Engineer, other pipe materials and methods such as, but not limited to, plastic or cat-in-place concrete pipe may be used provided that the conditions make it feasible and acceptable user experience with the product can be thoroughly demonstrated.

(IV) Connections to existing culverts.

Installation shall be made by using the same size and material as that in the existing culvert. Additional requirements may be made when connecting culverts such as catch basins for clean outs and other considerations.

(d) Placement. Culvert shall be laid true to line and grade with a minimum twelve (12") inches of cover unless otherwise approved in advance by the County Engineer.

(e) Installation. During Installation, all joints shall be sealed in a manner that prohibits intrusion of surrounding materials or soils. If a closed system has been infiltrated by soils due to improper installation, the developer shall be responsible.

7.03 Survey Monuments

- A. All existing survey control monuments which are disturbed, lost, or destroyed during construction shall be replaced by a registered surveyor at the expense of the developer.

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- B. Survey control monuments shall be placed or replaced in accordance with land surveying principles and in conformance with all applicable state and local regulations.
- C. Survey monuments shall be placed at all exterior boundaries.
- D. Standard monuments shall be cast in concrete, reinforced with reinforcing bar, and have a two (2") inch minimum brass cap with a two (2") inch shank. Roads to be dedicated to Pacific County or monuments placed in existing county roads or rights of way shall use monuments approved by the County Engineer. Surface roadway monuments will not be allowed unless approved by the County Engineer.
- E. A monument case with a brass disk embedded in concrete shall be placed in roads at all points of curves, points of tangent, and intersections, and at the center of cul de sacs.
- F. A signed statement from the land surveyor that all monuments and corners indicated on the development have been set in their proper location and are in good condition will be required prior to field inspection and prior to final approval of road.

7.04 Mail Boxes

Mail boxes are the responsibility of the individual owner and the U.S. Postal Service, and be set as follows:

- A. U.S. Postal Service approval is required.
- B. Mailbox supports will be of approved design.
- C. In the case of new road construction or reconstruction requiring mail boxes to be moved back or rearranged, the builder shall coordinate with the U.S. Postal Service.
- D. Mailboxes will be grouped or unitized wherever possible.

7.05 Landscaping

The following guidelines shall be utilized in evaluating and administering proposed or existing landscape areas within county rights of way.

- A. Any plantings or other improvements encroaching upon the right of way are subject to removal when the right of way is needed for public use.
- b. Continuous culvert shall have an approved catch basin at the property corner, at the inlet end of pipe, cross culvert or at a minimum of one (1) every three hundred (300') feet of pipe.

8.00 RETAINING WALLS

8.01 Design Criteria

Retaining walls, whether on public or private roads shall be designed and constructed to meet the minimum requirements of the AASHTO Bridge Specifications. Retaining walls with a height of four (4') feet or greater shall be designed by a professional

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engineer licensed by the State of Washington, and shall be submitted for approval by the County Engineer.

9.00 BRIDGES

9.01 Design Criteria

Bridges, whether on public roads or private roads, shall be designed and constructed to meet minimum requirements set forth in the AASHTO Bridge Specifications. All new bridges shall be designed to carry an AASHTO HS 20-44 or greater live load. The bridge roadway shall compromise the full width and configuration of the road being served, to include the traveled way plus shoulders, sidewalk, walkway, and/or bike lane. In no case will the width be less than twenty-six (26') feet for two-lane traffic. Requirements of utilities shall be duly considered. Bridges shall be constructed of steel, concrete, steel and concrete or treated timber. All materials shall be new. Bridge design shall be prepared by a professional engineer licensed by the State of Washington. Final approval shall be made by the County Engineer.

10.00 UTILITIES

10.01 Franchising Policy

Utilities to be located within the county road right of way shall be constructed in accordance with current franchise and permit procedures and in compliance with these standards. In the use of right of way, utilities shall be given consideration after the traffic carrying requirements of the roadway have been met. Use of right of way for utility installation will be granted on an individual case basis, but in no circumstance will a utility be allowed to create an adverse effect on the roadway or public using the roadway. Any utility working within a county right of way must secure a franchise from the Board of Pacific County Commissioners.

10.02 Utility Locations

Utilities within the right of way on new roads or in roadways where existing topography, utilities, or storm drainage are not in conflict shall be located as indicated below and as shown in Appendix M. Where existing utilities or storm drains are in place, new utilities shall conform to the standards as nearly as practical and yet be compatible with the existing installations. All utilities shall be buried at least (30") inches below the finished grade, except the minimum cover in ditches may be twelve (12") inches below flow line grade. Exceptions shall be approved when necessary to meet the special requirements or restrictions. In locating utilities within the right of way, precedence shall be given to gravity design systems.

- A. Storm Sewers: Installed in the ditch line at a depth to be approved by the County Engineer. (Minimum cover twelve (12") inches.)
- B. Sanitary Sewers: Five (5') feet either side of centerline at a depth approved by engineer. Laterals shall be installed to the right of way line. Additional construction may be required to prevent future disruption to the road facility.

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- C. Electrical Utilities: Power, telephone, and cable television will preferably be placed underground, on either side of the road at a depth of at least thirty (30") inches and posted accordingly. Otherwise these utilities shall be placed on poles set back of ditch line or pedestrian path, at locations compatible with driveways, intersections and other design features. To the maximum extent practical, these utilities should share common trenches or poles so that disruption of the road base and/or the number of poles in the right of way is held to a minimum.
- D. Water Lines: Thirty (30") inches below ditch line. Otherwise, in the shoulder outside the traveled lane on pavement edge.

10.03 Utility Installations in New Developments or Unmaintained County

Rights of Way

- A. Utility poles and underground utilities, including service crossings shall be installed or relocated prior to the start of road construction if planned road cuts and fills are minimal and the location of road elements can be clearly identified in advance. Otherwise, such utilities, including service connections, shall be installed or relocated after the subgrade has been completed but before surfacing has been placed. All underground utilities making roadway crossings shall be cased in a conduit. Conduit shall extend past the normal ditch line unless approved by the County Engineer.
- B. All utility installations inside nonmaintained county rights of way shall be done under a revocable permit approved by the County Engineer.
- C. Pipe materials and overall installation work shall be done in accordance with WSDOT or APWA Standard Specifications.

10.04 Utility Installations on Maintained County Rights of Way

- A. Utility trenching or transverse cuts will not be permitted unless it can be shown that alternatives, such as boring, jacking, or relocating outside the paved area are not feasible or unless the utility can be installed prior to reconstruction or overlay.
- B. When trenching or cutting is permitted, the following procedure applies: Pavement patching shall include cutting, removal and disposal of the existing pavement; preparation, placement and compaction of backfill material; placement and compaction of aggregate base material to a depth of six (6") inches minimum; placement and compaction of crushed surface top course material to two (2") inches minimum; temporary patch (if required); application of tack coat; and construction of surfacing to conform to like kind pavement. All work shall be performed in accordance with the applicable sections of the WSDOT or APWA Standard Specifications and the following:
 - 1. Pavement cutting: The existing pavement shall be first cut by an appropriate means to facilitate removal. Immediately prior to

Pacific County

- placement of the permanent patch, the existing pavement shall be cut as directed by the County Engineer. The pavement shall be removed so as to provide a firm, neat, straight, vertical edge to join. The contractor shall be responsible for maintaining the edge. Additional cuts will be required to correct broken or damaged edges.
2. Backfilling. Backfilling shall be done in accordance with the WSDOT Standard Specifications, Section 7-04.3(3), or equivalent. Minimum width of trench shall be two (2') feet to accommodate a vibratory compactor.
 3. Temporary pavement patching. A temporary two (2") inch thick cold asphalt plant mix patch may be required to be placed and maintained over the excavated area until final settlement has occurred. The temporary patch shall then be removed and the existing pavement cut before permanent repairs are made.
 4. Permanent pavement repair. The structural capacity of the patch shall be equal to the section of the existing pavement, but in no case shall the thickness of the asphalt concrete be less than two (2") inches compacted. Full depth asphalt concrete patches shall be placed in layers not exceeding three (3") inches with adequate compaction.
 5. Tack Coat. A tack coat of CSS-1 or approved equal shall be uniformly applied to all edges to be joined and lapped six (6") inches over the existing pavement. The lines from the new asphalt pavement shall be raked over the tack coat, feathered and rolled or tamped to seal the joint.
 6. Asphalt concrete. Asphalt concrete used for patching shall be Class B or G and shall be furnished, placed and compacted in conformance with the WSDOT or APWA Standard Specifications.
 7. Portland Cement Concrete. Cement concrete mix used for patching shall be a 6.5 sack mix and shall be furnished, placed, and compacted in conformance with the WSDOT or APWA Standard Specifications.
 8. Unpaved shoulders shall be patched similar to the roadway section except the asphalt application may be omitted.
- C. No person, firm or corporation shall commence work or permit any person, firm or corporation to commence work on construction, alteration, repair, or removal of any utility or the cutting and/or paving of any street, alley or other public place in Pacific County without first obtaining a Pacific County Permit, except under emergency conditions and then only by the franchise holder. Emergency repairs by private individuals is not permitted. If an emergency condition occurs, notification shall be made to Pacific County Public Works as soon as possible, with explanation of what occurred and what work was done within the right of way.

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11.00 INSPECTION

11.01 Basis for Control of the Work

- A. Work performed in the construction or improvement of County roads or development roads, whether by or for a private developer, by County forces, or by a contractor shall be done to the satisfaction of the County Engineer and in accordance with approved plans. It is emphasized that no work shall be started until such plans are approved, except for emergency repairs and regularly scheduled maintenance. Any revision to such plans shall be approved by the County Engineer. A set of "as built" drawings will be required at the completion of the project, prior to final acceptance.
- B. The County Engineer shall have authority to enforce the standards as well as other referenced or pertinent specifications and appoint such personnel as necessary to inspect the work.

11.02 Inspection Criteria

On all road construction and work performed within county rights of way, inspections will be done under the control of the County Engineer, or by other inspectors as deemed necessary by the County Engineer. Unless otherwise instructed by the County Engineer, the inspections shall be made as follows:

Inspection #1. Temporary sedimentation and erosion control in accordance with approved plans.

Inspection #2. Underground drainage, at the stage that trenching and placing of pipe are completed but prior to cover.

Inspection #3. Underground utilities, including sewers, shall be inspected during backfilling for compliance with APWA Standard Specifications. General roadway inspection is required when completing the drainage system, underground utilities, and roadway grading, including gravel base and compaction.

Inspection #4. General roadway at the stage that crushed surfacing top course has been placed and compacted.

Inspection #5. General roadway, while paving is in progress.

Inspection #6. Overall roadway, final, after paving, monument inspection, cleaning of drainage systems, and all necessary clean up.

Structural Inspections. Structural inspections shall be at critical stages of foundation, placement and assembly of components and final completion and tests, as directed by the County Engineer.

11.03 Notification Requirements

The developer shall notify the County Engineer's office at least twenty-four (24) hours in advance of each required inspection. Failure to comply with inspection requirements will necessitate appropriate testing and certification as directed by the County Engineer. Costs of such testing and certification shall be borne by the developer. At the time that such action is directed by the County Engineer, no further

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work will be permitted until all tests have been completed and all corrections have been made to the satisfaction of the County Engineer.

11.04 Revisions to Inspection Sequence

If the developer believes that the inspection sequence indicated above does not fit the requirements of a particular project, a request to the County Engineer in sufficient time to permit revision to the inspection schedule should be made.

11.05 Required Inspection To Be Performed by the Developer or Other Agencies

When it is determined by the County Engineer that work being performed requires quality control inspection, the developer or agency performing the work shall be required to furnish qualified inspector(s) acceptable to the County Engineer. All inspection work performed shall be coordinated with the County Engineer.

11.06 Materials Sampling and Testing

Material sampling and testing shall be at a frequency determined by the County Engineer. Testing and sampling may be performed by a private testing laboratory, in which case, certified test reports shall be furnished to the County Engineer.

12.00 BONDS

12.01 Performance Bonds

Improvements (except those constructed pursuant to Ordinance No. 149) may be either completed by the developer and accepted by Pacific County, or a surety may be posted with the County Engineer's Office. This surety will guarantee the completion of road and/or drainage improvements that are required and shall conform to the following conditions:

- A. The surety shall be of a form approved by the Prosecuting Attorney.
- B. The surety shall be equal to one hundred (100%) percent of the construction estimate approved by the County Engineer. Included in this estimate shall be twenty-five (25%) percent for contingencies and inflation.
- C. The surety shall be for two (2) years, at which time it may be extended for (1) additional year at the option of the County Engineer. A new amount will be calculated at that time.
- D. The surety shall be used by the County Engineer to make the required improvements if the improvements are not made in the allotted time.
- E. Ninety (90%) percent of the surety may be released upon completion and approval of the work by the County Engineer. The remainder shall be held until the road is accepted for maintenance by the Board of County Commissioners.

12.02 Permit Bonds

A surety commensurate with the extent of work to be done may be required to be

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posted with Pacific County prior to the issuance of a permit.

13.0 DEVELOPMENTS UTILIZING COUNTY RIGHTS OF WAY

13.01 Purpose

It is the purpose of this section to establish a permit system for and standards regulating the use of unopened, unimproved or unmaintained county rights of way or existing service roads in order to assure that road improvements are sufficient for normal and emergency vehicular traffic; and to provide equitable sharing of improvement costs; and to further the orderly development of the county road system; and to otherwise protect the public health, safety and welfare. No development permits shall be issued for any purpose until these requirements have been fulfilled.

13.02 Permit Required

Unopened, unimproved and/or unmaintained county road rights of way shall not be improved or used for access purposes nor shall development approval authorizing such improvements or use be granted unless a permit has been issued.

- A. **Improvement Plans:** An engineering plan of the proposed road including cross sections, drainage, alignment, utility locations, and any additional information deemed pertinent by the County Engineer may be required. Cost for the development of such plan and required studies shall be borne by the permit applicant.
- B. **Required Improvements:** The improvements shall be completed to provide normal and emergency vehicular access and provide available utilities to the proposed development farthest from an established and maintained public road. All construction shall be done in a manner acceptable to the County Engineer, and the permittee shall be responsible for proper notice to the County Engineer requesting necessary construction inspections.
- C. **Survey:** When deemed necessary by the County Engineer to adequately define the limits of right of way, the permit applicant shall cause the right of way to be surveyed by a licensed land surveyor. Such survey shall be recorded in accordance with the Survey Recording Act.
- D. **Materials Within Right of Way:** The permit shall contain a statement regarding the use or disposition of timber, soil, rock, sand, vegetation, or other materials found within the right of way. The applicant shall provide such information as necessary. If not utilized in the construction of roadway

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improvements, such material shall be disposed of in accordance with directions of the abutting property owners and the County Engineer. Any affected fences located within the right of way shall be disposed of and/or relocated in accordance with directions of the owner or the County Engineer.

- E. **Abutting Property Owner Notification:** A permit applicant shall provide certification that all owners of property abutting each side of the right of way have been contacted and informed of all proposed improvements. Any objection of such property owners shall be stated along with the manner in which the applicant proposes to resolve the objections.
- F. **Signs:** When deemed necessary by the County Engineer, the permit shall require that the roadway be posted with “PRIVATELY MAINTAINED ROAD” and/or “END OF COUNTY MAINTAINED ROAD” signs provided by the Public Works Department. The initial cost of the sign(s) shall be borne by the permit applicant, and the County will maintain such required signs.
- G. **Additional Right of Way and Tributary Improvements:** The permit applicant will be required to deed right of way necessary to fulfill the minimum road right of way width prescribed by State Statute (RCW 36.85.010). If the County Engineer certifies that an existing road serving the proposed development cannot properly accommodate the increased traffic volume and type, the permit applicant will be required to provide additional right of way and to improve existing service roads to the appropriate standard as adopted by the Board of County Commissioners.
- H. **Plan Approval:** Upon approval of the road development plans, the required work shall be completed prior to final approval. As an alternative to completion, bonds or securities satisfactory to the County may be accepted in lieu of actual construction. Said bonds shall be in an amount to be determined by the County Engineer and shall have a final expiration date of not more than two (2) years.
- I. **Maintenance:** The County shall provide no maintenance to a road improved to less than the adopted standard. If an applicant, at no expense to the County, constructs a road upon county right of way which meets all of the standards of road construction of the applicable adopted standards, and the County Engineer so certifies the Board of County Commissioners may accept the road into the County Road System.

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13.03 Land Division

Development of the road system associated with a land division shall be in accordance with the requirements of the Pacific County Road Standards and relevant Pacific County Ordinances. If so certified by the County Engineer, the development may necessitate acquisition of additional right of way and improvements to tributary service roads in accordance with Subsection 13.02.G.

13.04 Commercial or Multi-Family Development

- A. **Engineering and Drainage Plans:** Detailed engineering and drainage plans shall be required for commercial or multi-family developments. Cost for the development of such plan and required studies shall be borne by the developer. Such plans and studies shall be in accordance with the requirements for long plat developments and shall include other information deemed pertinent by the County Engineer.
- B. **Road Construction:** The permit applicant shall be required to construct roads to the standards adopted by the Board of County Commissioners. If so certified by the County Engineer, the development may necessitate acquisitions of additional right of way and improvements for tributary service roads in accordance with Subsection 13.02.G.

13.05 Single Family Residence

- A. **Permit Conditions:** Permits to use county right of way for access to a single family residence will be issued subject to the following terms and conditions. A permittee seeking a first permit will be required to clear and grub the right of way to an adequate width and grade, drain and surface the roadway in accordance with the Pacific County Road Standards and to make such additional improvements as may be required by the County Engineer.
- B. Subsequent permits issued for a right of way improved under prior permits shall require the permittee to further improve the constructed roadway as designated by the County Engineer. Such additional improvements may include but are not limited to the following:
 - 1. **Second Permit**
The permittee shall remove any built up sod from the existing roadway, regrade ditches and drainage ways, provide a minimum of six (6) inches of gravel base across the full width of the roadway, and provide three (3) inches of crushed base course across the center sixteen (16) feet of the roadway.
 - 2. **Third Permit**

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The permittee shall remove any built up sod from the existing roadway, regrade ditches and drainage ways, regrade the existing roadway, provide a minimum of three (3) inches crushed surface base course across the entire roadway, and provide a minimum of three (3) inches crushed surface top course across the center sixteen (16) feet of the roadway.

3. **Additional Permits**

Subsequent permittees shall add such additional crushed surfacing top course, regrade ditches and roadway, and make such further improvements as may be necessary in the opinion of the County Engineer. If considered appropriate, the County Engineer may recommend the formation of a road improvement district (RID).

13.06 Permit Conditions for Temporary Access

The County Engineer may issue a permit authorizing temporary and limited use of unopened and unmaintained county road right of way for access to short-term activities such as construction or logging. The permit shall require construction of roadway facilities to standards prescribed by the County Engineer in view of the duration and nature of the desired use. A bond shall be required prior to issuance of the permit guaranteeing restoration of the right of way and blocking of access at the expiration of the permit period. The permit shall specify minimum improvements required in accordance with the adopted standards. Construction of such improvements to the satisfaction of the County Engineer shall be completed within one (1) year or the permit shall expire.

13.07 Compliance With Laws and Ordinances

- A. **Other Permits:** It is the sole responsibility of the permit applicant to obtain all other required permits and approvals.
- B. **Environmental Review:** The permit process prescribed in this policy is subject to the Washington State Environmental Policy Act.

14.0 CURBS AND SIDEWALKS IN SEAVIEW AND OCEAN PARK

14.01

Acceptable curbing and sidewalk improvements are required with any commercial or residential development within certain areas of Seaview and Ocean Park. "Development" shall include all new construction and any substantial modification wherein (1) the cost of the change is estimated to be at least fifty percent (50%) of the value of the existing structure or (2) the change is to allow a higher occupancy usage (i.e. single-family residential to multi-family residential or commercial, or multi-family residential to commercial). Any applicable development requiring or utilizing

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an approach to a county road shall provide curbing, sidewalk and road surface improvements as specified by the County Engineer in accordance with said standards.

14.02

The requirements pertaining to curbs and sidewalks are applicable to the following roadways:

SEAVIEW

- Both sides of SR103 from 37th Street to the Long Beach city limits.

OCEAN PARK

- Both sides of SR103 from 251st Place to Bay Avenue, and
- Both sides of Pacific Way from Bay Avenue to 262nd Place.
- Both sides of Bay Avenue from “U” Street to “L” Place, and
- The North side of Bay Avenue from “L” Place to western most point of legal development.

14.03

The attached STANDARD PLANS in Appendix N are hereby adopted as the standards that apply to county rights of way addressed in Section 14.

14.04

Any applicable development requiring or utilizing an approach to a State highway shall provide curbing, sidewalk and road surface improvements as specified by the Washington State Department of Transportation.

APPENDIX

Pacific County

APPENDIX A – TRIP GENERATION GUIDELINES

TRIP GENERATOR	GENERATION BASE	TRIPS/GENERATION BASE
I. Residential Uses:		
Single family dwelling units	Dwelling Unit	10
Apartment	" "	6.1
Low Rise	" "	5.4
High Rise	" "	3.7
Condominium	Occupied Unit	5.1
Mobile Home	Dwelling Unit	5.4
Retirement	" "	3.3
PUD	" "	7.9
II. Roadside Services		
Hotel	Room	10.5
Motel	" "	10.1
Resort Hotel	" "	10.2
Service Station	Pump	133.0
Restaurant-Quality,sit down	1000 gross ft. ²	56.3
Restaurant-sit down	" "	164.4
Drive-In	" "	55.3
III. Retail Sales:		
Shopping Center	1000 gross ft. ²	115.8
Discount Store	" "	64.6
Hardware Store	" "	51.3
Supermarket	" "	125.5
Convenience Market	" "	577.7
IV. Service:		
Bank-full service	1000 gross ft. ²	192.0
Bank-savings & loan	" "	74.0
Insurance	" "	11.5
Medical Offices	" "	75.0
V. Commercial/Industrial:		
Office Building	1000 gross ft. ²	12.3
Office Park	" "	20.6
Industrial-General	" "	5.4
Industrial-Light General	" "	5.5
Industrial-Heavy	" "	1.5
Industrial Park	" "	7.3
Manufacturing	" "	4.0
Warehousing	" "	5.0

Appendix A (continued)

These guidelines are not intended to be complete. If the developer has questions about a specific land use, data may be available from the County Engineer. These guidelines are average figures taken from the Institute of Transportation Engineers (ITE) "Trip Generation- An Informational Report, 1976" and "Supplement No. 1, 1979."

The traffic safety study shall include the following basic information:

1. A scale drawing of the proposal indicating the road system, right of way, type of roads, access points, and other features of significance in the road system.
2. Vicinity map showing transportation routes to be impacted by the development.
3. Type of dwelling units proposed (single family, multiple family, attached, detached, etc.) and trip generation factors for the development. In cases of activity other than residential, the same type of information will be required (commercial, industrial, etc.)
4. The volume of traffic expressed in terms of Average Daily Traffic (ADT) on that roadway network between the development and nearest state highway which can reasonably be expected to be used by existing traffic (pedestrians, cars, trucks, etc.) and by traffic from the development. This volume of traffic shall be expressed in terms of current Average Daily Traffic along with directional distribution (D Factor), peak hour demand (K ratio) and percentage of trucks (T Factor), in the traffic stream.
5. Physical features of the roadway network involved, with regard to functional classification, capacity, safety, and operations.
6. Capacity analysis of the road system affected by the development proposed between the development and the nearest state highway which can reasonably be expected to bear traffic generated by the development.
 - a. Capacity analysis may generally assume conditions for two (2) lane highways without access control, urban and suburban arterials, and at-grade intersections as defined in the Highway Capacity Manual.
 - b. Level of service and volume to capacity ratio (V/C) are to be determined and indicated within the report, showing factors used and methodology.
 - c. Volume figures used shall consist of:
 - (i) Current Average Daily Traffic (ADT)
 - (ii) Projected ADT at completion of proposal
 - (iii) Growth projection if completion is more than two (2) years away.
7. The staged increased traffic volumes caused by the development as it is developed with regard to all transportation routes.
8. Traffic volumes will be projected for twenty (20) years into the future.
9. Other similar data that may be required to provide a complete and thorough analysis.

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APPENDIX B

MINOR COLLECTORS

<u>Road Name</u>	<u>Road No.</u>
1. Willows	10510
2. G Street	10520
3. 30 Street	10660*
4. L Street	11130
5. 38 Pl & N Pl	11240*
6. N Pl	11350*
7. K Pl	11630
8. Stringtown	15130
9. 225 Street	23420
10. 227 Pl	23800
11. Park Avenue	24690*
12. 270 Street	27600*
13. 274 Pl	28620*
14. Joe Johns	30000*
15. M Pl	33730
16. 311 Pl	34700*
17. Oysterville	37770*
18. Stackpole	37580
19. 2nd Street	41270
20. Ray-South Bend	43880*
21. Summit Street	44050*
22. Menlo-South Fork	46730*
23. Lilly-Wheaton	47490
24. Menlo-Rue Creek	47510
25. Bullard Ave.	47660*
26. Lindgren	50740
27. Midway Beach	50860
28. Smith-Anderson	51630*
29. Warrenton Can.	52460
30. Seamobile	53200*
31. Smith Creek	60440
32. Larson	65320
33. Fowler Street	67860*
34. Sandridge	91090*
35. Parpala	91190
36. Salmon Creek	91420*
37. North Nemah	94080
38. Bloomhardt	94290*
39. Elk Prairie	94700
40. Monohon Land.	96100*
41. Camp I & Bullard	96190*

*Portions of roads are minor
collectors

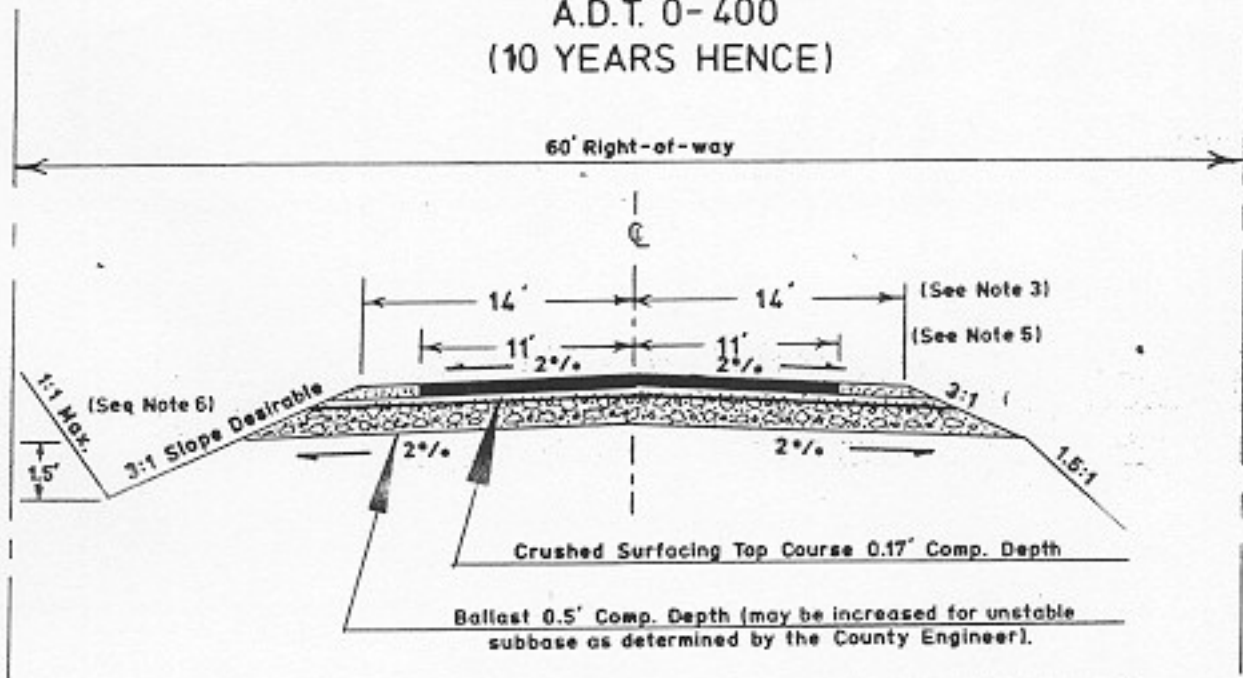
MAJOR COLLECTORS

<u>Road Name</u>	<u>Road No.</u>
1. Ilwaco-Ft. Canby	10090
2. Ilwaco-No. Head	10370
3. 60 Street	12580
4. Pioneer	13100*
5. Cranberry	14200
6. Olympia Street	15930
7. Portland Street	16090
8. Prince Street	16180
9. Oregon Street	16210
10. Valley Street	16290
11. Knappton	17690
12. Upper Naselle	19240
13. Bay Ave	25840
14. Vernon	26410
15. Joe Johns	30000*
16. N Street	30110*
17. 295 Street	30210*
18. I Street	30870*
19. Sandridge	37370
20. Oysterville	37770*
21. N. River Valley	61240
22. Oakville	61510
23. Sandridge	91090*
24. S.Val-Upper Naselle	91280*
25. Salmon Creek	91420*
26. Bay Center	94910
27. Golf Course	94290*
28. Tokeland	95130
29. Willapa	96100*
30. Willapa	96190*
31. Butte Creek	96300
32. No. River Valley	96400

*Portions of roads are major
collectors.

ROADWAY SECTION COLLECTOR - ACCESS

A.D.T. 0-400
(10 YEARS HENCE)



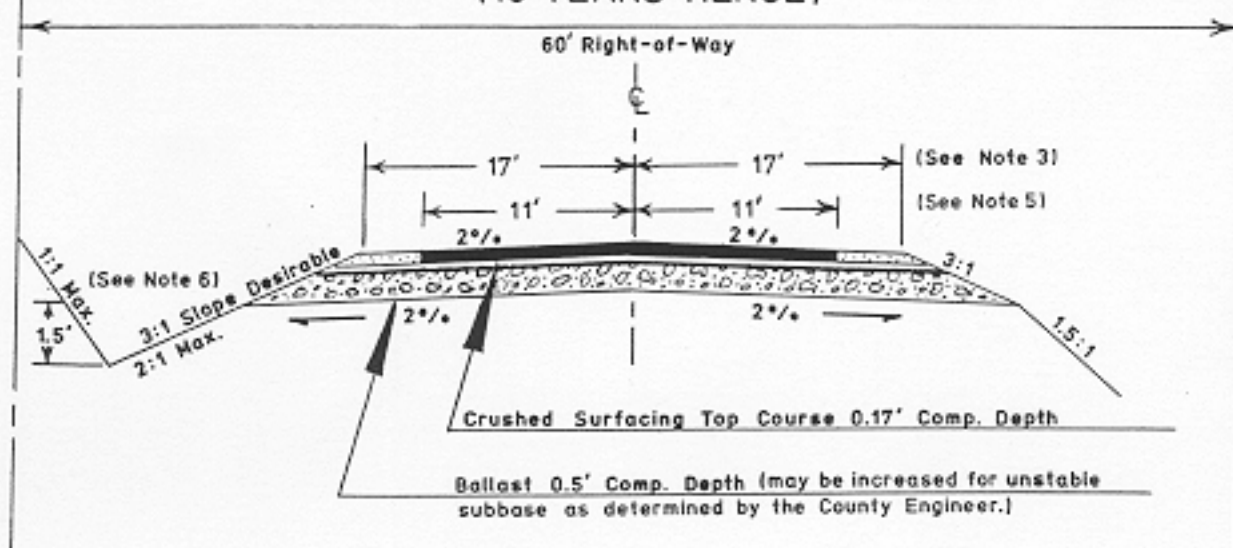
	FLAT	ROLLING	MOUNTAINOUS
CURVATURE (Max. Deg.)	8.25	13.25	25.00
GRADIENT (Max. %) ¹	7	9	12
MINIMUM RADIUS (ft.)	695	430	230
DESIGN SPEED (m.p.h.)	50	40	30
STOPPING DISTANCE (ft.)	375	275	200

NEW BRIDGES ²	
Clear Width (ft.)	28
Vertical Clearance (ft.)	16.5
Design Load	A.A.S.H.T.O. HS20-44

1. May be steeper for shorter distances.
2. All bridge curbs to meet State Standards. Sidewalk to be determined on an individual basis.
3. For guardrail installation, width of shoulder to be an additional 2 feet.
4. Clearing, grading & grubbing: to extent necessary for construction and proper sight distance as determined by the County Engineer.
5. Surfacing Type: Asphalt Concrete Class B. (Depth of asphalt and depth of rock to be determined by design and conditions.
6. Soil types may require more or less slope.

ROADWAY SECTION COLLECTOR - MINOR

A.D.T. 400-2,000
(10 YEARS HENCE)



	FLAT	ROLLING	MOUNTAINOUS
CURVATURE (Max. Deg)	7.5	12.5	23.0
GRADIENT (Max. %) ¹	6	8	10
MINIMUM RADIUS (ft.)	760	460	250
DESIGN SPEED (m.p.h.)	50	40	30
STOPPING DIST. (ft.)	375	275	200

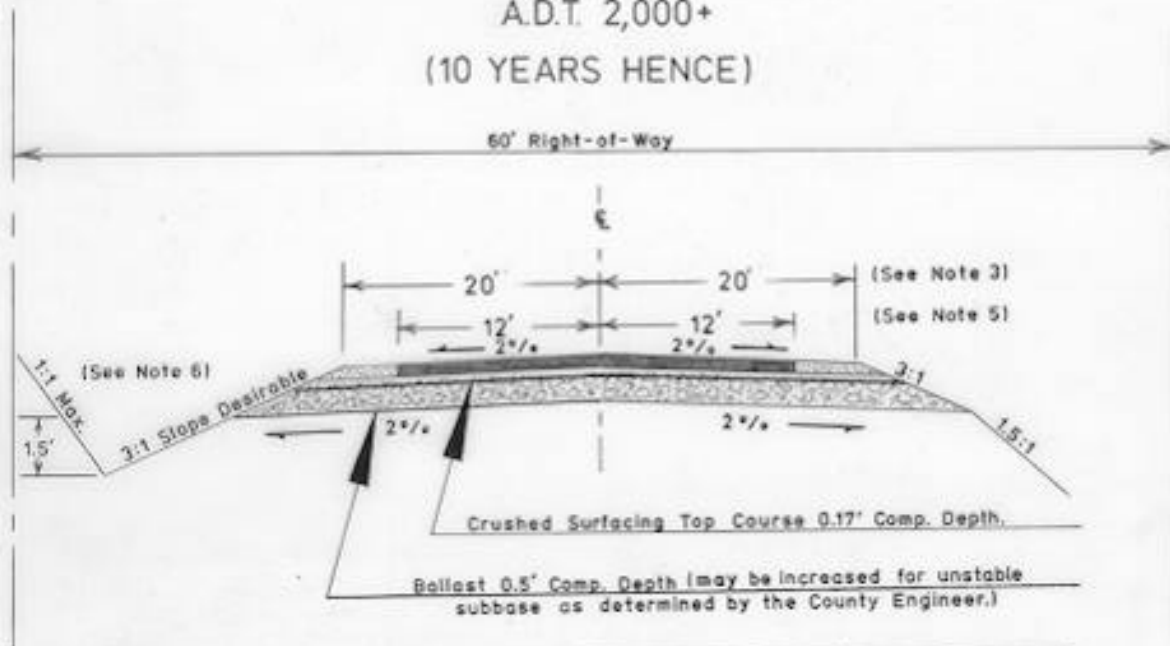
NEW BRIDGES²

Clear Width (ft.)	28
Vertical Clearance (ft.)	16.5
Design Load	A.A.S.H.T.O. HS20-44

- May be steeper for shorter distances.
- All bridge curbs to meet State Standards. Sidewalk to be determined on an individual basis.
- For guardrail installation, width of shoulder to be an additional 2 feet.
- Clearing, grading, grubbing: to extent necessary for construction and proper sight distance as determined by the County Engineer.
- Surfacing Type: Asphalt Concrete Class B. (Depth of asphalt and depth of rock to be determined by design and conditions.
- Soil types may require more or less slope.

ROADWAY SECTION COLLECTOR-MAJOR

A.D.T. 2,000+
(10 YEARS HENCE)



	FLAT	ROLLING	MOUNTAINOUS
CURVATURE (Max. Deg.)	6.75	6.75	11.25
GRADIENT (Max. %) ¹	6	7	10
MINIMUM RADIUS (ft.)	850	850	510
DESIGN SPEED (m.p.h.)	50	50	40
STOPPING DISTANCE (ft.)	375	375	275

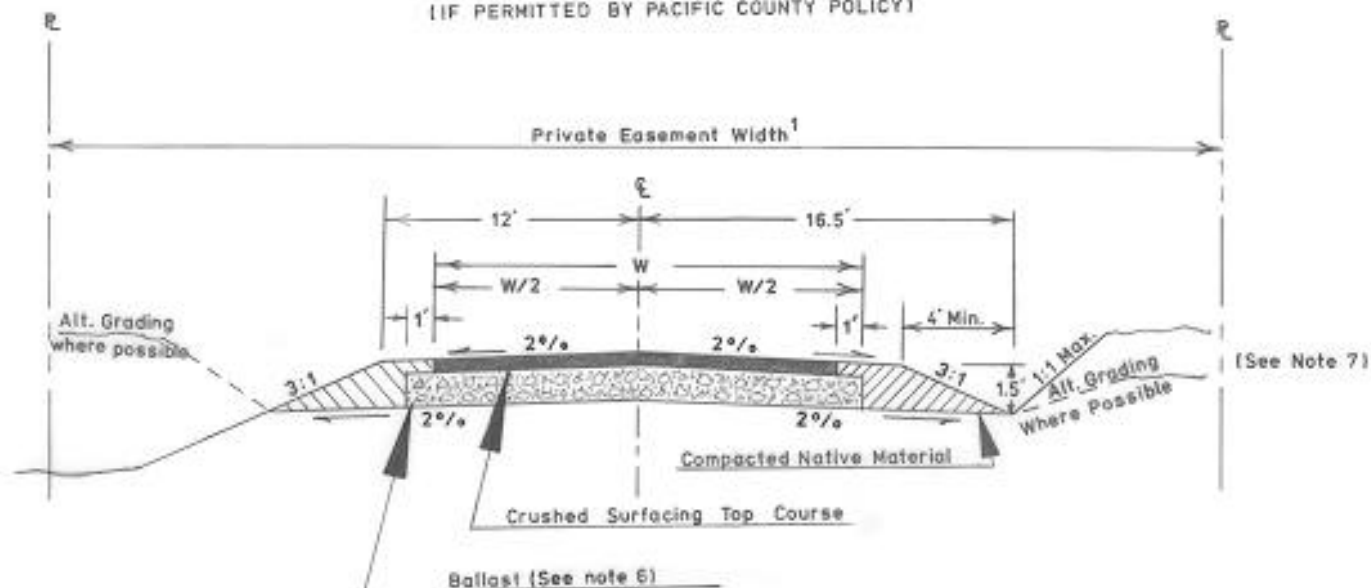
NEW BRIDGES ²	
Clear Width (ft.)	28
Vertical Clearance (ft.)	16.5
Design Load	A.A.S.H.T.O. HS20-44

1. May be steeper for shorter distances.
2. All bridge curbs to meet State Standards. Sidewalk to be determined on an individual basis.
3. For guardrail installation, width of shoulder to be an additional 2 feet.
4. Clearing, grading & grubbing: to extent necessary for construction and proper sight distance as determined by the County Engineer.
5. Surfacing Type: Asphalt Concrete Class B. (Depth of asphalt and depth of rock to be determined by design and conditions.
6. Soil type may require more or less slope.

ROADWAY SECTION PRIVATE ROAD

Appendix F

(IF PERMITTED BY PACIFIC COUNTY POLICY)



PROPERTY USE	DWELLING UNITS
Single Family	2 - 4
Duplex	5 - 16
Multi-Family	1 - 8

WIDTH (W)	MIN. COMP. THICKNESS	
	TOP COURSE	BALLAST
12' ⁶	County Engineer's evaluation	
20'	0.17'	0.50'
20'	0.17'	0.50'

NOTES/CONDITIONS

1. RIGHT-OF-WAY: AS REQUIRED TO CONSTRUCT & MAINTAIN ROADWAY FACILITY, PLUS PROVISIONS FOR ANY UTILITIES (UNLESS UTILITIES PROVIDED FOR BY SEPARATE EASEMENT OUTSIDE ROADWAY EASEMENT) TO SERVE MAXIMUM DENSITY PERMITTED BY ZONING OR COMPREHENSIVE PLAN BUT NOT LESS THAN FORTY (40) FEET.
2. CLEARING, GRADING & GRUBBING: TO EXTENT NECESSARY FOR CONSTRUCTION AND PROPER SIGHT DISTANCE.
3. CROSS SLOPE: MAY BE SLOPED AT 2% TO CUT DITCH WHERE 12' WIDE ROADWAY IS PERMITTED.
4. WHEN W=12' PROVIDE VEHICLE PASSING TURNOUTS AT 200' INTERVALS.
5. DITCHING: AS REQUIRED TO PROVIDE PROPER DRAINAGE.
6. BALLAST THICKNESS MAY BE INCREASED FOR UNSTABLE SUB-BASE AS DETERMINED BY THE COUNTY ENGINEER.
7. SOIL TYPE MAY REQUIRE MORE OR LESS SLOPE.

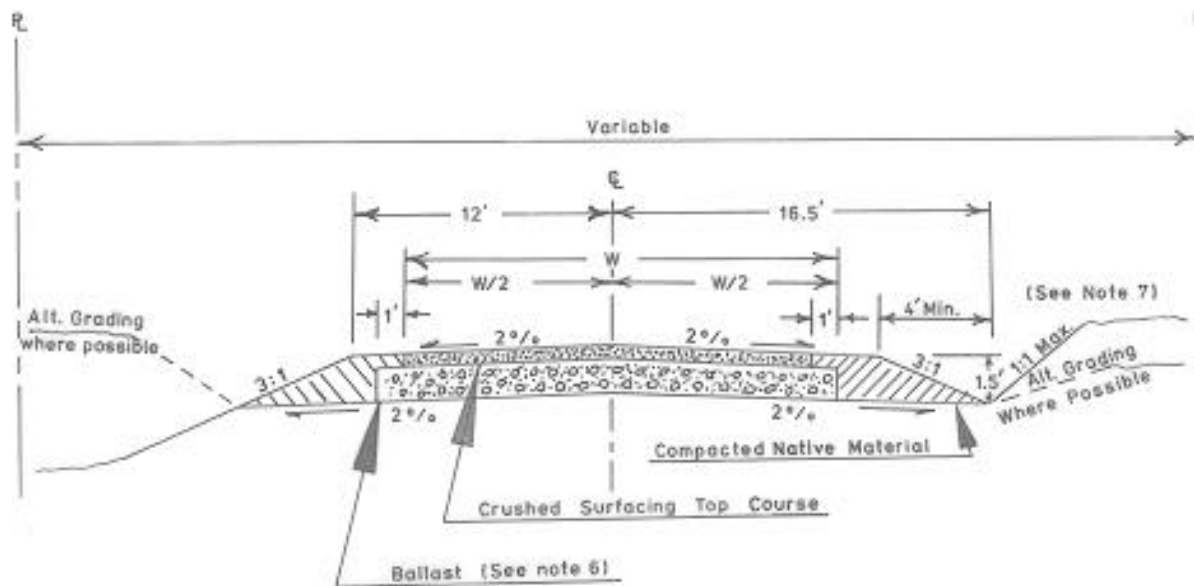
	FLAT	ROLLING	MOUNTAINOUS
CURVATURE (Max. Deg.)	12.5	19.0	29.0
GRADIENT (Max %)	7	10	12
STOPPING DISTANCE (ft.)	375	275	200

8. PRIVATE ROADS WILL NOT BE MAINTAINED BY PACIFIC COUNTY.

ROADWAY SECTION

Appendix G

UNMAINTAINED COUNTY RIGHT-OF-WAY



PROPERTY USE	DWELLING UNITS
Single Family	2 - 4
Duplex	5 - 16
Multi-Family	1 - 8

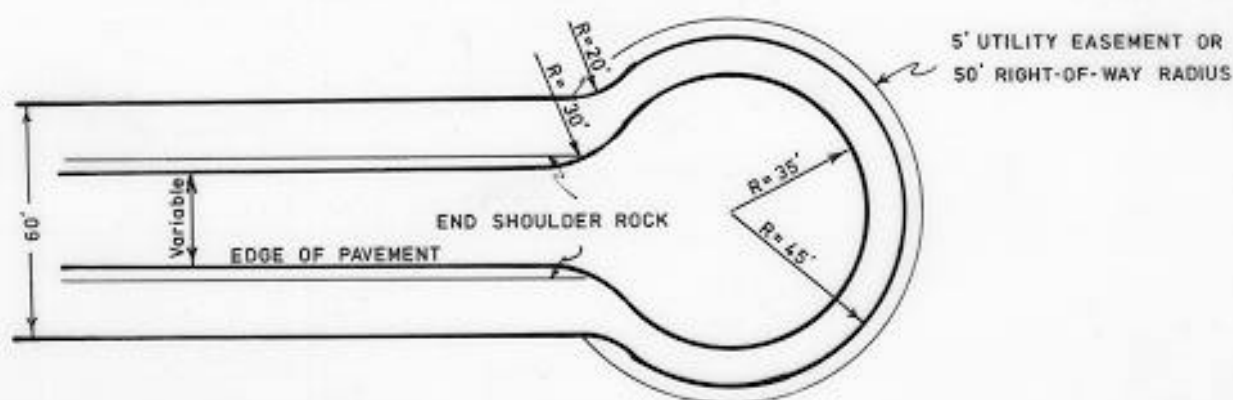
WIDTH (W)	MIN. COMP. THICKNESS	
	TOP COURSE	BALLAST
12' ⁴	County Engineer's Evaluation	
22'	0.17'	0.50'
22'	0.17'	0.50'

NOTES / CONDITIONS

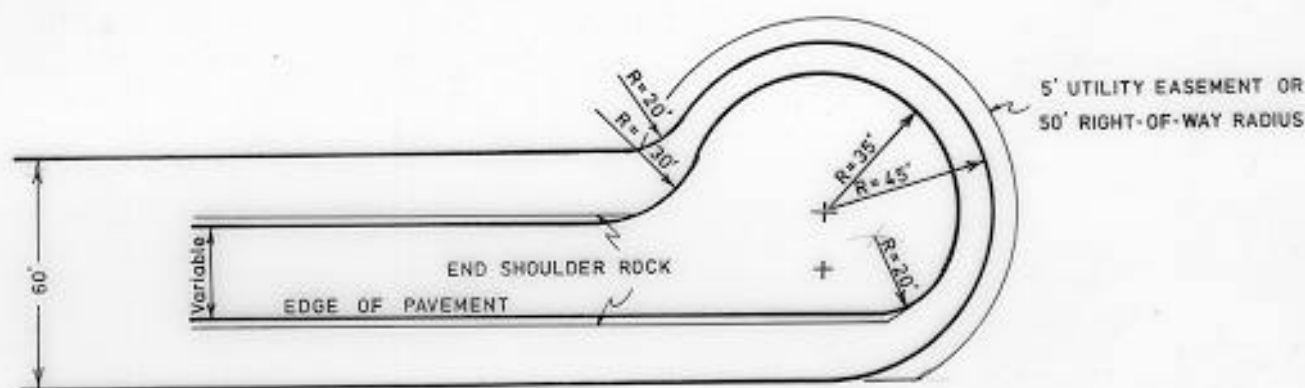
- RIGHT-OF-WAY: AS REQUIRED TO CONSTRUCT & MAINTAIN ROADWAY FACILITY, PLUS PROVISIONS FOR ANY UTILITIES (UNLESS UTILITIES PROVIDED FOR BY SEPARATE EASEMENT OUTSIDE ROADWAY EASEMENT) TO SERVE MAXIMUM DENSITY PERMITTED BY ZONING OR COMPREHENSIVE PLAN.
- CLEARING, GRADING & GRUBBING TO EXTENT NECESSARY FOR CONSTRUCTION AND PROPER SIGHT DISTANCE.
- CROSS SLOPE: MAY BE SLOPED AT 2% TO CUT DITCH WHERE 12' WIDE ROADWAY IS PERMITTED.
- WHEN W=12' PROVIDE VEHICLE PASSING TURNOUTS AT 200' INTERVALS.
- DITCHING: AS REQUIRED TO PROVIDE PROPER DRAINAGE.
- BALLAST THICKNESS MAY BE INCREASED FOR UNSTABLE SUB-BASE AS DETERMINED BY THE COUNTY ENGINEER.
- SOIL TYPE MAY REQUIRE MORE OR LESS SLOPE.

	FLAT	ROLLING	MOUNTAINOUS
CURVATURE (Max. Deg.)	12.5	19.0	29.0
GRADIENT (Max %)	7	10	12
STOPPING DISTANCE (ft.)	375	275	200

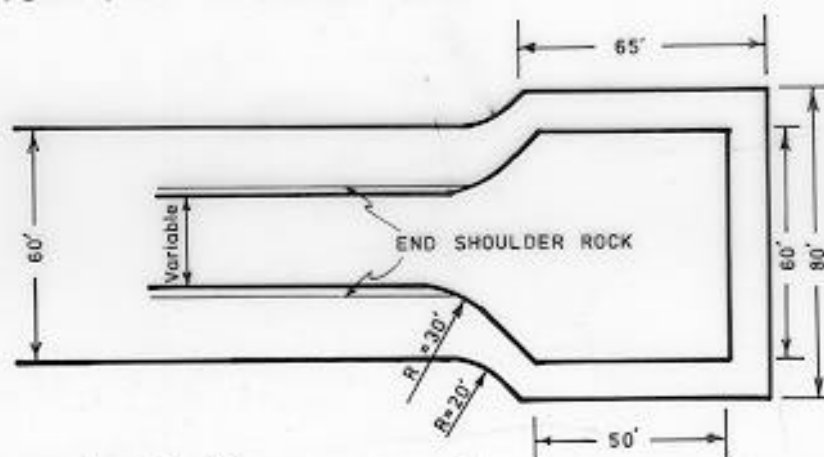
- RIGHT-OF-WAY OPENED FOR DEVELOPMENT PURPOSES WILL NOT BE MAINTAINED BY PACIFIC COUNTY UNTIL BROUGHT UP TO THE APPLICABLE COUNTY STANDARD.



Standard Cul-de-sac



Alternate Cul-de-sac



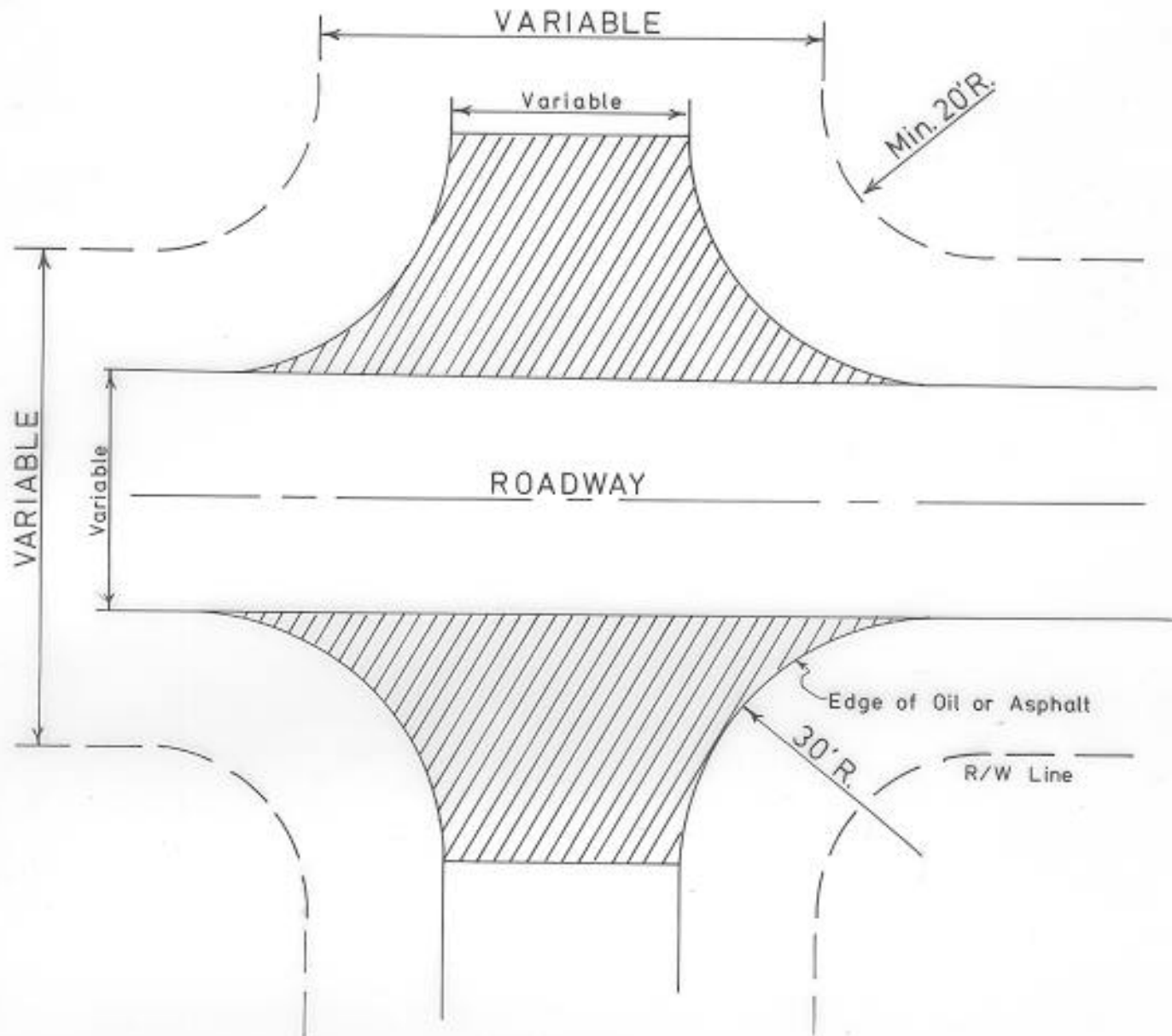
Standard Turnaround

INTERSECTION

Appendix I

ACCESS CONTROL

MINOR COLLECTOR

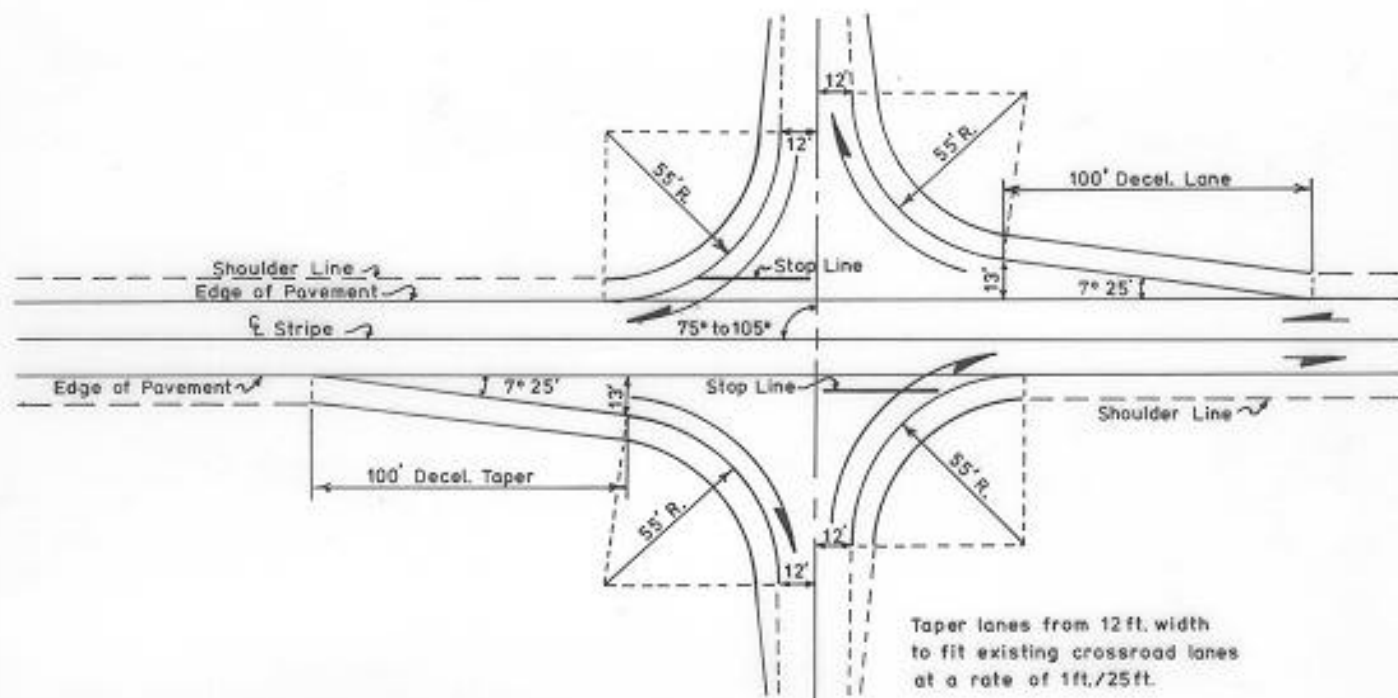


STANDARD DESIGN
A.D.T. BELOW 2,000

INTERSECTION

Appendix J

MAJOR COLLECTOR



STANDARD DESIGN
A.D.T. 2,000+

DRAINAGE

Appendix K

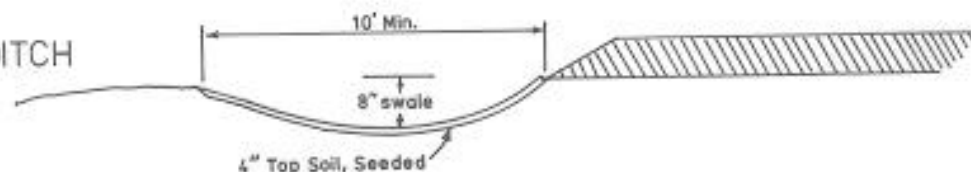
NOTE: Soil types may require more or less slope than shown.

STANDARD

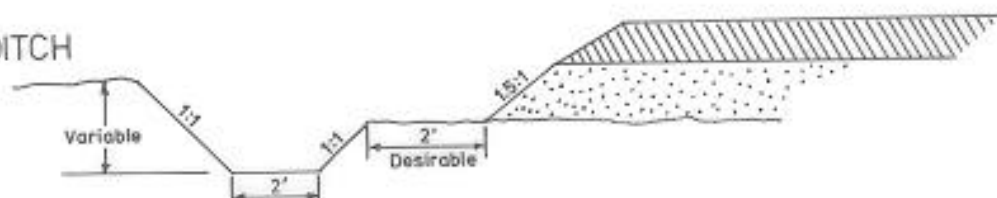


OPTIONAL (At the approval of the engineer)

A. ROLLED DITCH

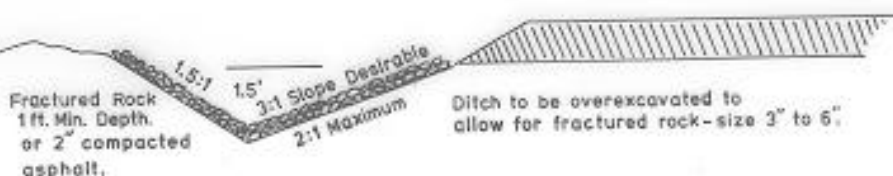


B. SPECIAL DITCH



C. LINED DITCH

(Mandatory where gradient exceeds 10%)



D. CATCH BASIN: Design shall be of the type specified by the engineer in conjunction with Design Types I, IA, II and III in the most current edition of the State of Washington Standard Plans for Road and Bridge Construction.

Maximum length of culvert without cleanout opening or spacing between catch basins shall not exceed suggested catch basin spacing and percent roadway grade:

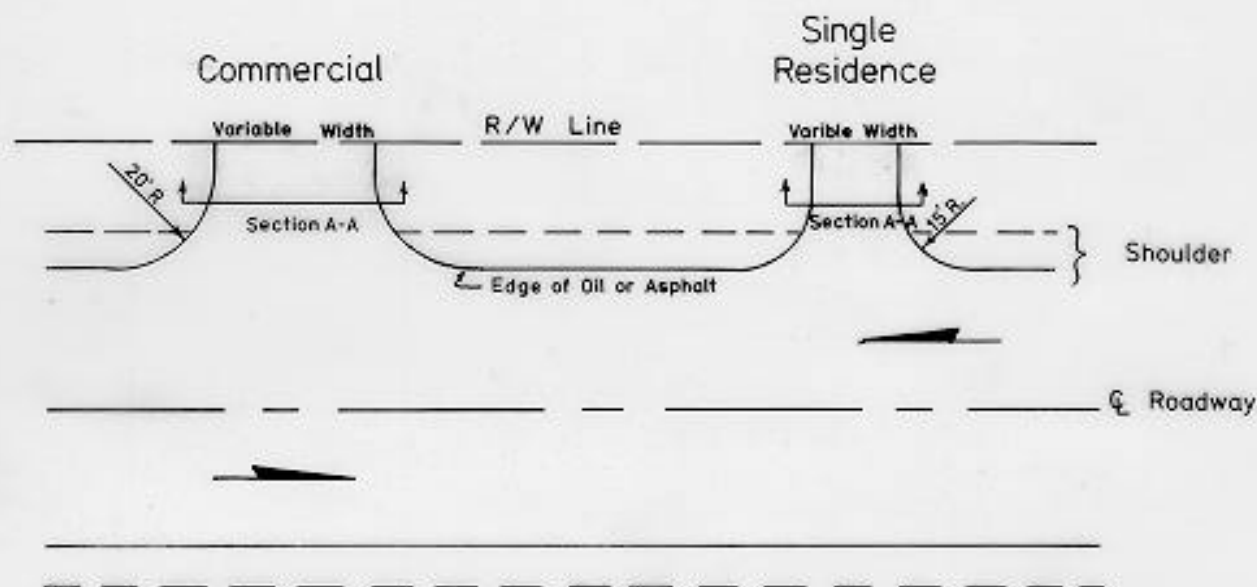
0.5 % - 1.5 %	150'
1.5 % - 3.0 %	200'
3.0 % - 8.0 %	300'
8.0 % - 12.0 %	200'
12.0 % - 20.0 %	150'

* Cross-pipes approved for use in conjunction with these Design Standards.

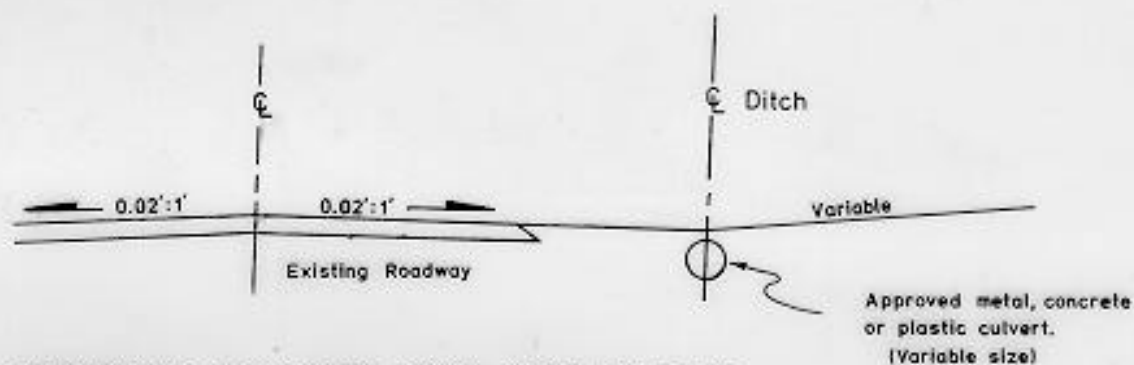
1. Approved Metal
2. Approved Plastic
3. Approved Concrete

* E. ROADWAY CROSS PIPES: 18" diam. desirable min., actual size to be determined by engineer. Steel cross pipes must be treated with Treatment II.

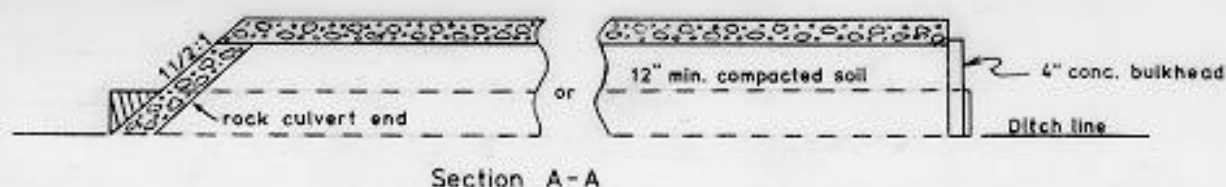
COMMERCIAL & SINGLE RESIDENCE DRIVEWAY DESIGNS (FOR NEW CONSTRUCTION)



	PIPE LENGTH (SEE NOTE)	PIPE DIAMETER
Single	20' Min.	12" Min.
Commercial	40' Min.	12" Min.



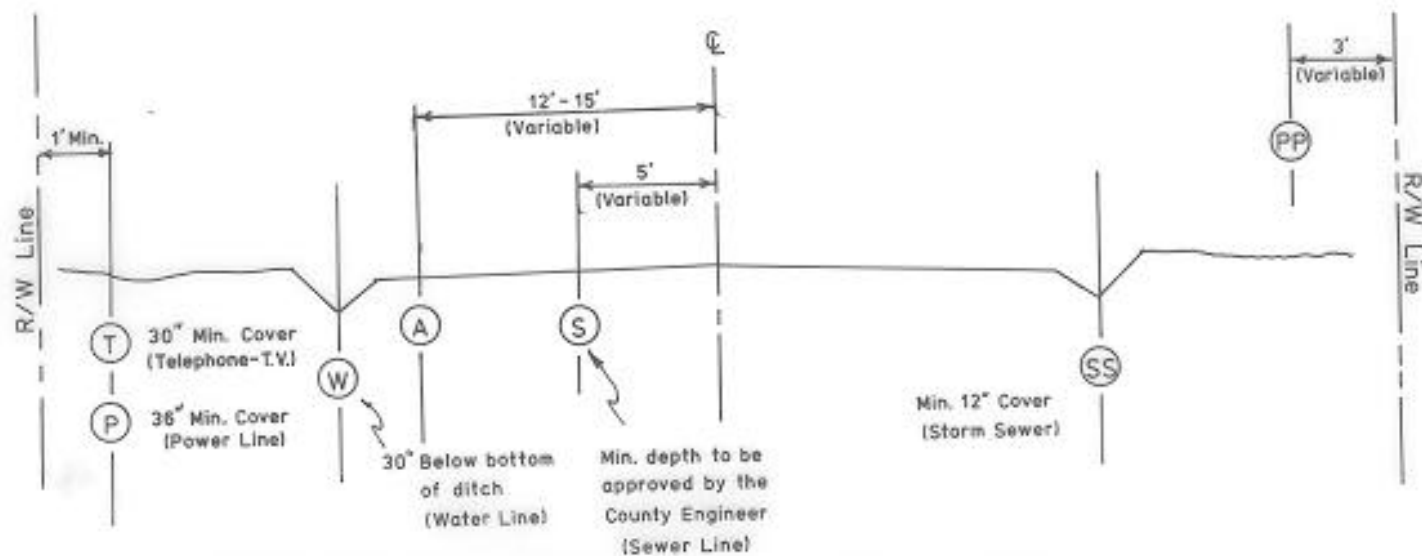
DRIVEWAY CULVERT END TREATMENT



NOTE: FOR APPROACH AND CULVERT INSTALLATION ON EXISTING ROADWAYS, THE APPROACH RADIUS AND CULVERT LENGTH SHALL BE DETERMINED ON AN INDIVIDUAL BASIS BY FIELD INSPECTION, AND THE ABOVE DESIGN STANDARDS WILL NOT APPLY.

UTILITIES LOCATION

(FOR NEW CONSTRUCTION)



A = Alternate location for power, television or telephone (common trench acceptable).

P = Power line (underground).

PP = Power pole location.

S = Sanitary sewer location.

SS = Storm sewer location.

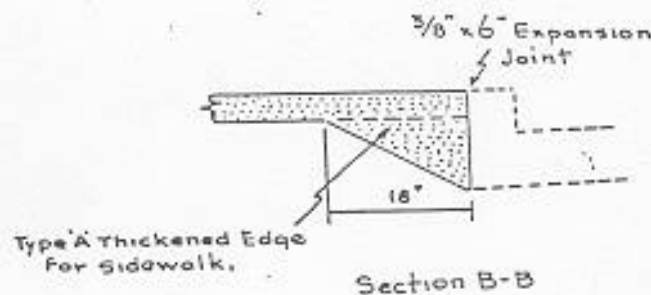
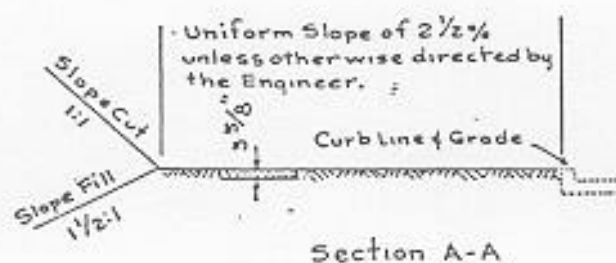
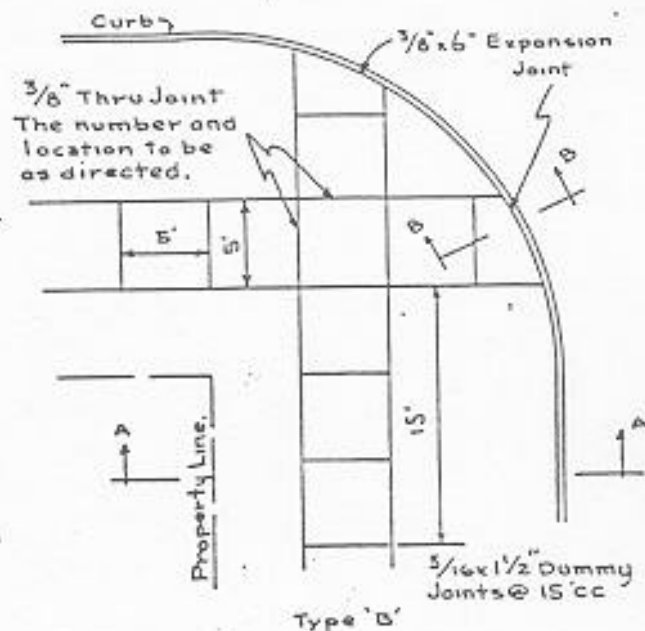
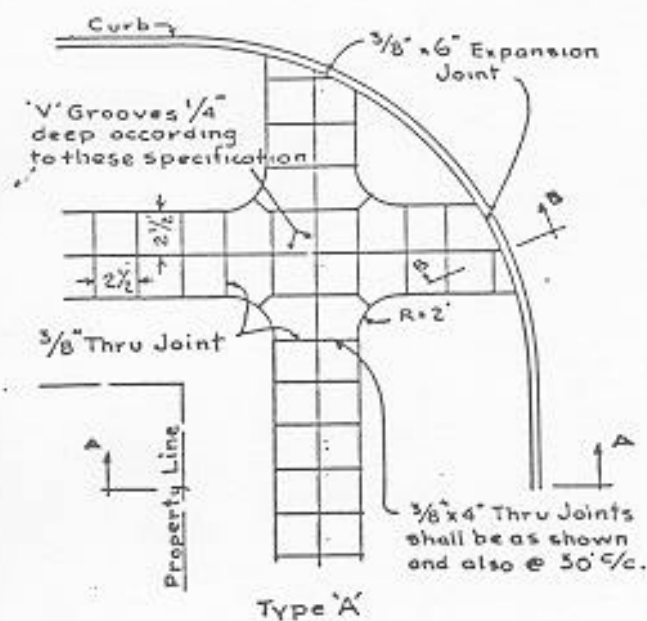
T = Telephone or television.

W = Water line location.

NOTE: Placement of utilities on existing roadways will be determined on an individual basis by the County Engineer.

APPENDIX N

**LOCATION MAPS AND
STANDARD PLANS
APPLICABLE
TO
SECTION 14**



General Notes

Joints thru & dummy joints shall be as shown above. Thru Joints shall also be placed in the sidewalk section at driveway & alley returns as shown on Standard Plans Nos 7 to 15. All joints shall be clean & edged with an edger having a $\frac{1}{4}$ " Radius. Joints shall be flush with the finished surface.

Forms shall be either wood or steel and shall meet all requirements of these Specifications.

Concrete shall be class 5 ($1\frac{1}{2}$) or 5 ($\frac{3}{4}$)

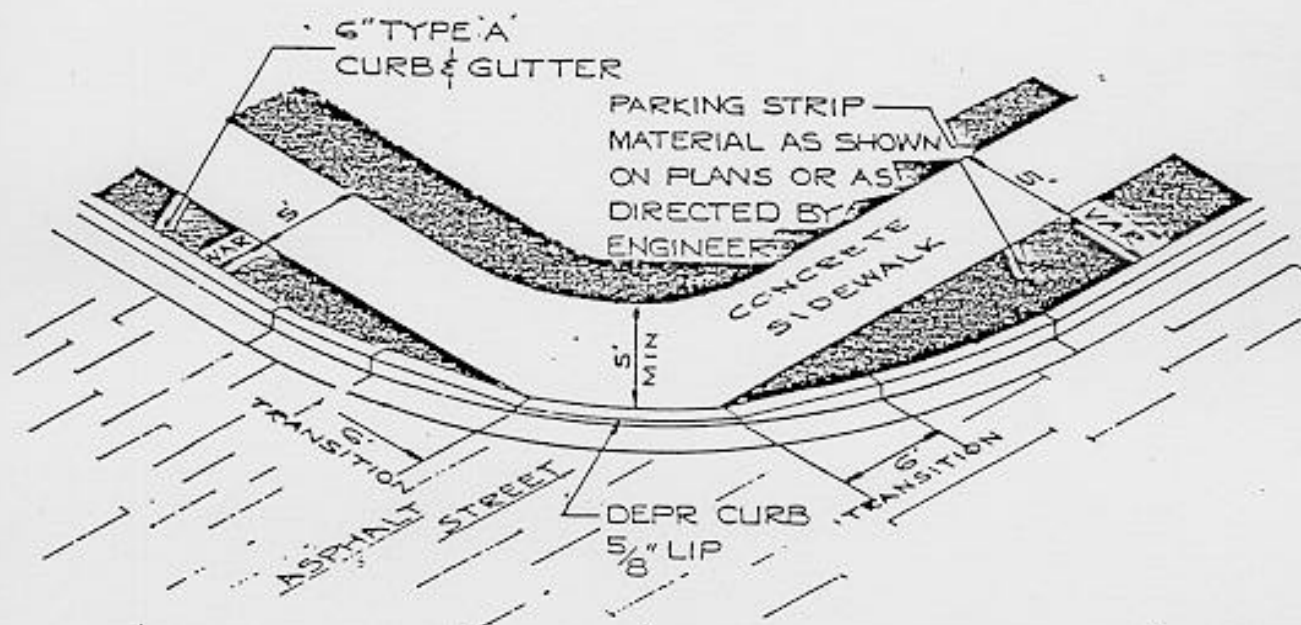
Procedures for further requirements for forms, form setting, placing, finishing & curing shall be as outlined in these Specifications.

Note all utility poles, meter boxes, etc. in sidewalk area shall have $\frac{3}{16}$ " joint material (full depth) placed around them before placing concrete.

DO NOT SCALE

STANDARD PLAN NO. 14
Cement Concrete
Sidewalk
Type "A" & Type "B"

NOTE
DETERMINATION OF RAMPING
OF SIDEWALKS SHALL BE AS
DIRECTED BY THE ENGINEER.



INTERSECTION DETAIL

NO SCALE

STANDARD PLAN NO. 14A

Wheel Chair Ramp
Type A

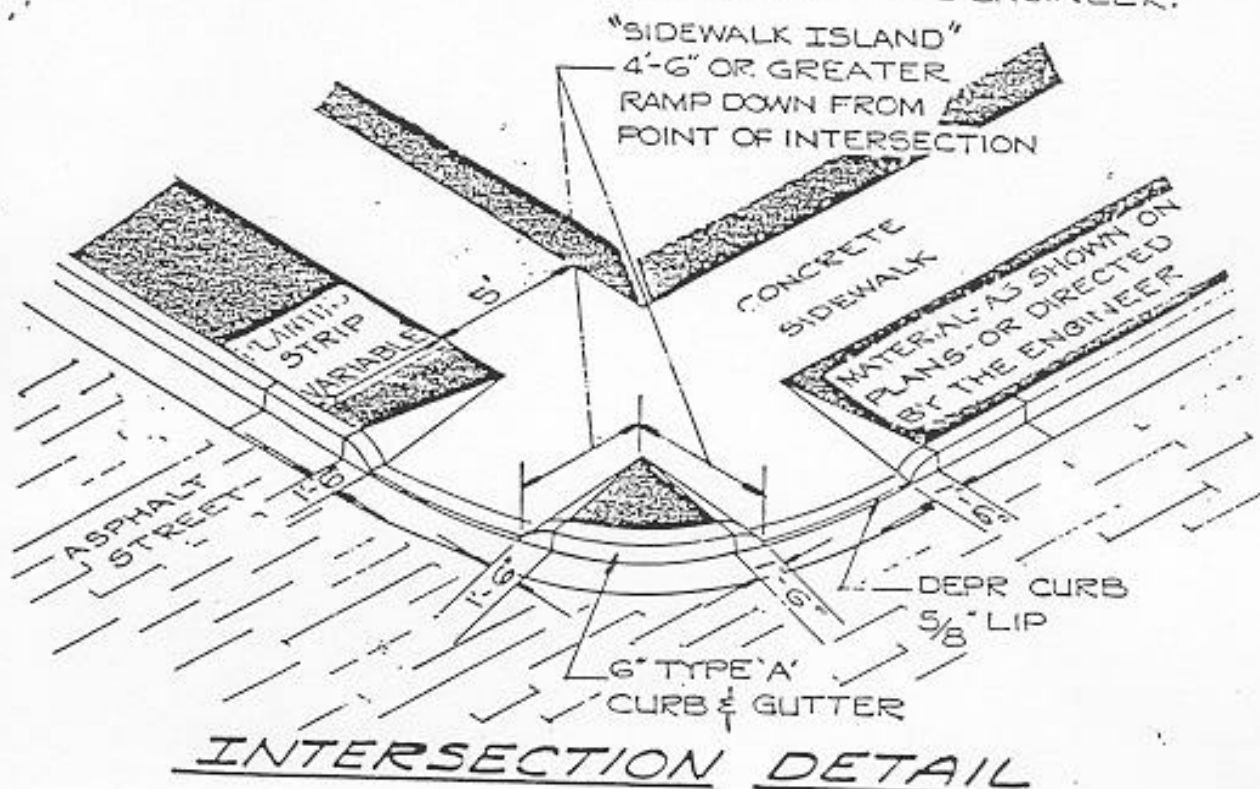
NOTE 1

IF "SIDEWALK ISLAND" IS GREATER
THAN 4'-6" - USE THIS SHEET

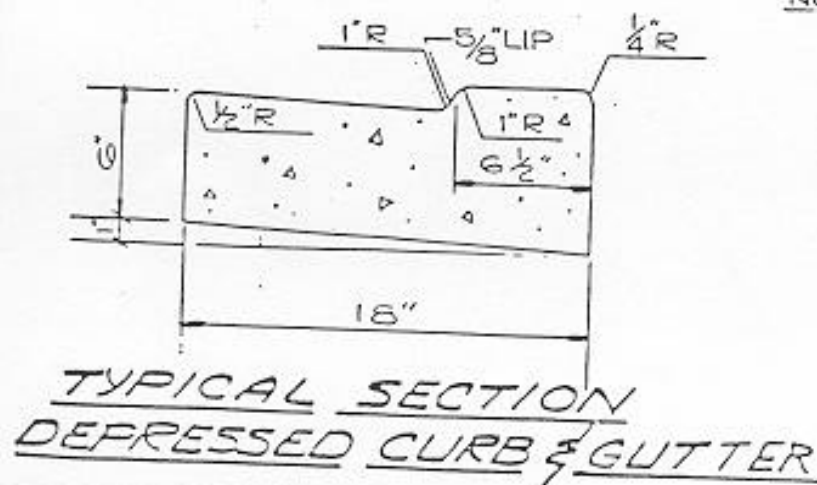
IF LESS THAN 4'-6" - USE STD. PLAN

NOTE 2

DETERMINATION OF RAMPING OF
SIDEWALKS SHALL BE AS
DIRECTED BY THE ENGINEER.



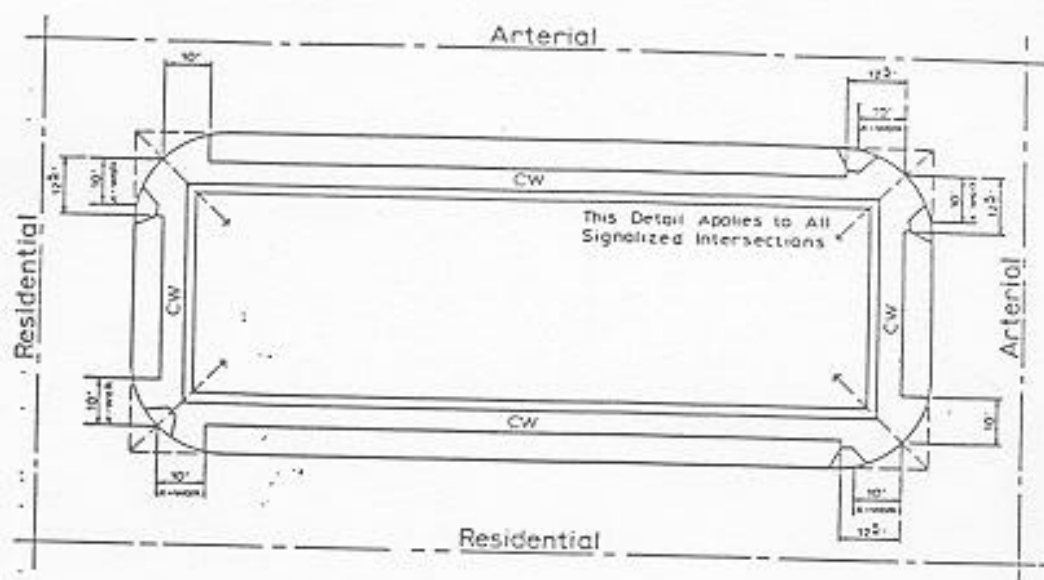
NO SCALE



STANDARD PLAN NO. 14B

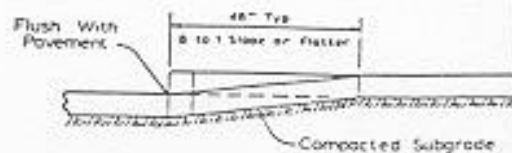
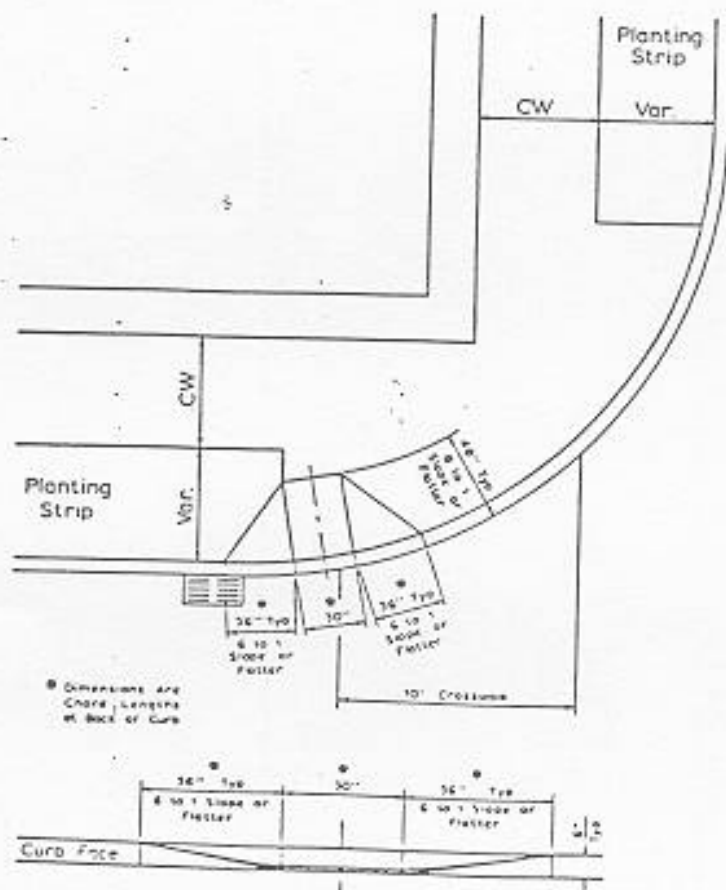
Wheel Chair Ramp
Type B

Typical Wheel Chair Ramp Locations



Notes

1. Inlets Shall Be Outside the Wheel Chair Ramp.
2. The Wheel Chair Ramp Shall Be Moved Away from the Crosswalk to Avoid Conflicts with Hydrants, Poles, Inlets, or Other Utilities, Except Where the Street Grade Exceeds 4%.
3. If the Wheel Chair Ramp Cannot Be Moved According to Note 2 and Must Be Located Within the Crosswalk, the Ramp Must Have a Coarse Textured Surface Approved By the City Engineer.
4. Crosswalks Are Not Always Marked.



DO NOT SCALE

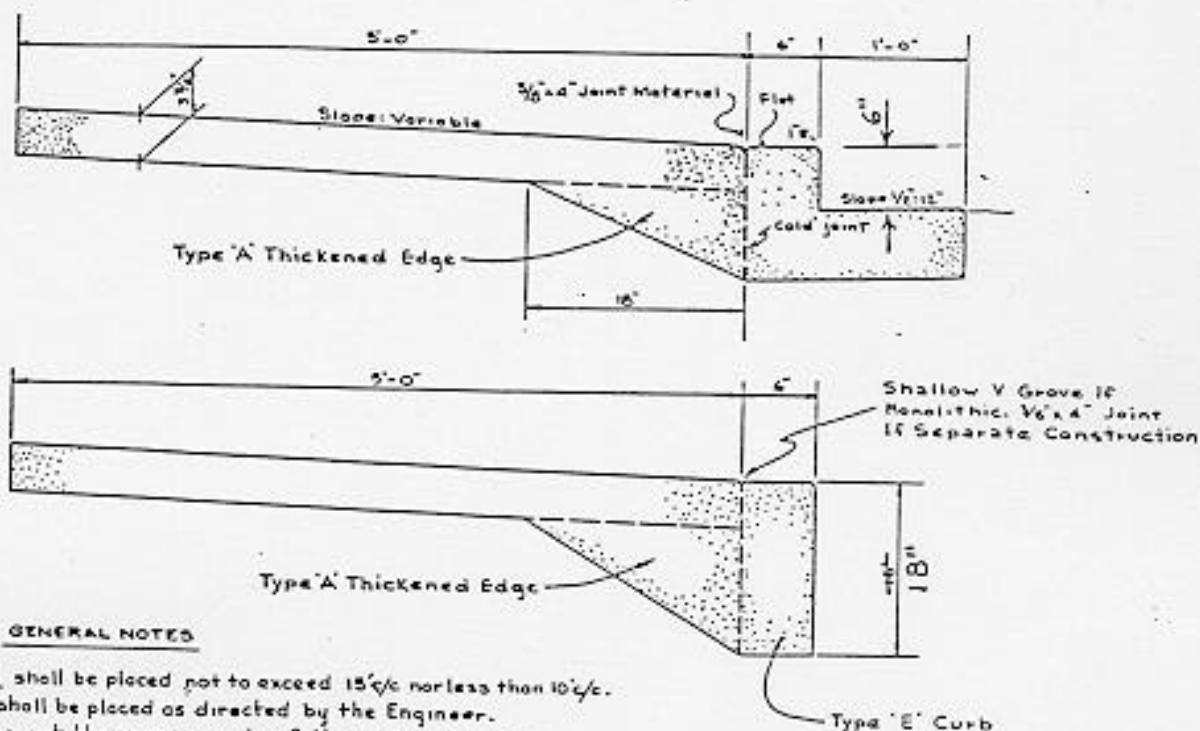
STANDARD PLAN NO. 14C

Wheel Chair Ramp
Type C

NOTE:

Thru and Dummy Joints details are the same as shown on Standard Plan

NOTE: This section may be either Curb or Curb & Gutter Type 'A' or Type 'B'



GENERAL NOTES

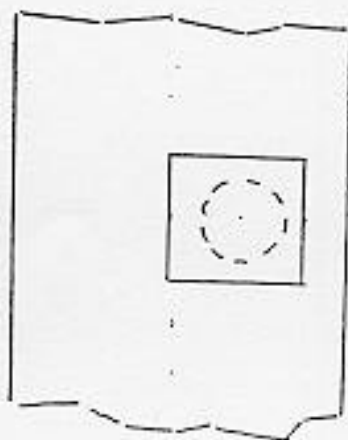
Dummy Joints shall be placed not to exceed 15' c/c nor less than 10' c/c.

Thru Joints shall be placed as directed by the Engineer.

Material shall meet the requirements of these Specifications.

Concrete shall be cement concrete class 5 (1 1/2) or 5 (3/4).

Procedures for further requirements for forms, form setting, placing, finishing, and curing shall be as outlined in these Specifications.



Obstruction Blockout

3/8" x 4" Joint material

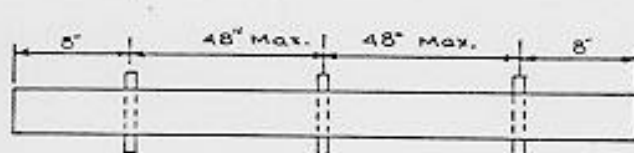
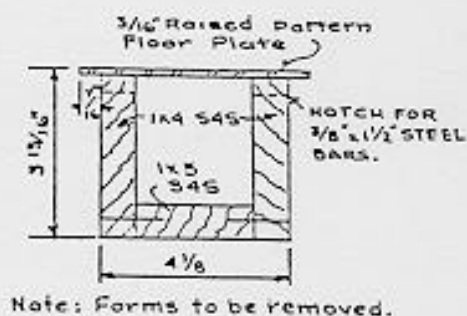
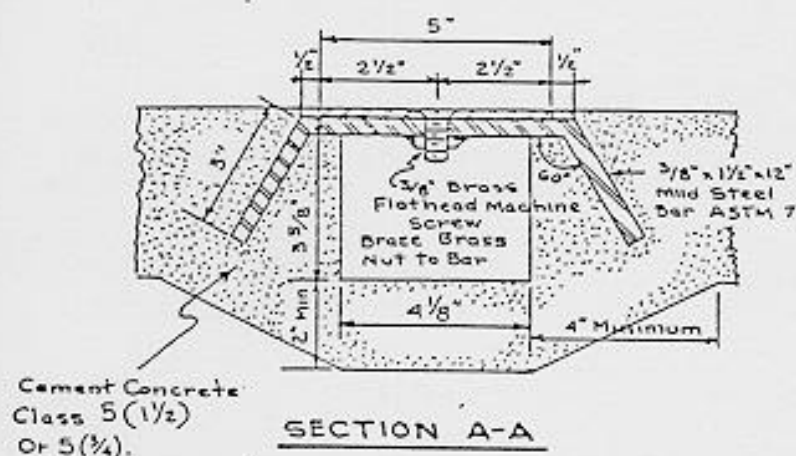
Utility Pole 24" x 24" Minimum

Water meter boxes not allowed inside walks unless design approved by County Engineer.

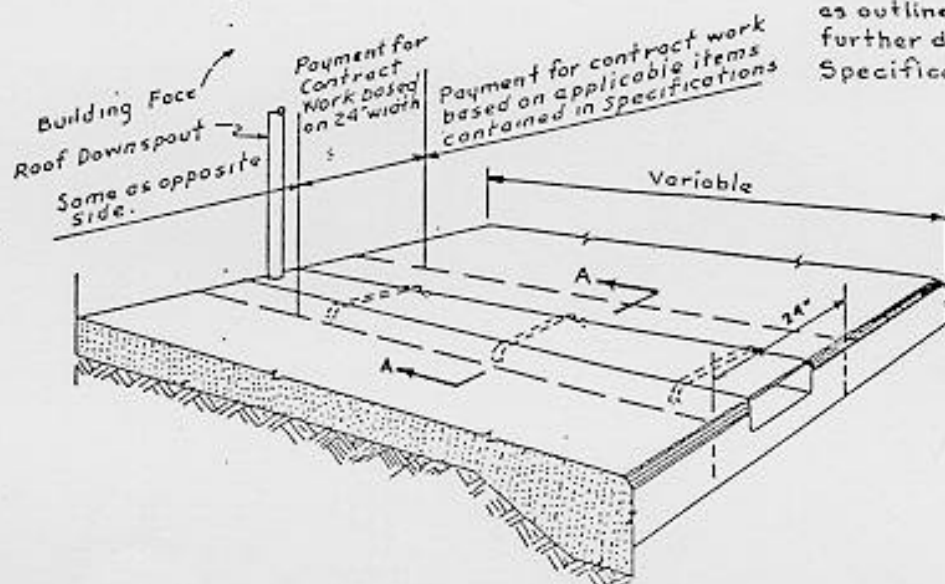
Do Not Scale

STANDARD PLAN NO. 15

Cement Concrete
Combined
Walk, Curb, Curb &
Gutter



NOTE
For walks 6' and less use only 2 bars,
for walks 6' to 10' use 3 bars,
for walks over 10' use 4 bars.

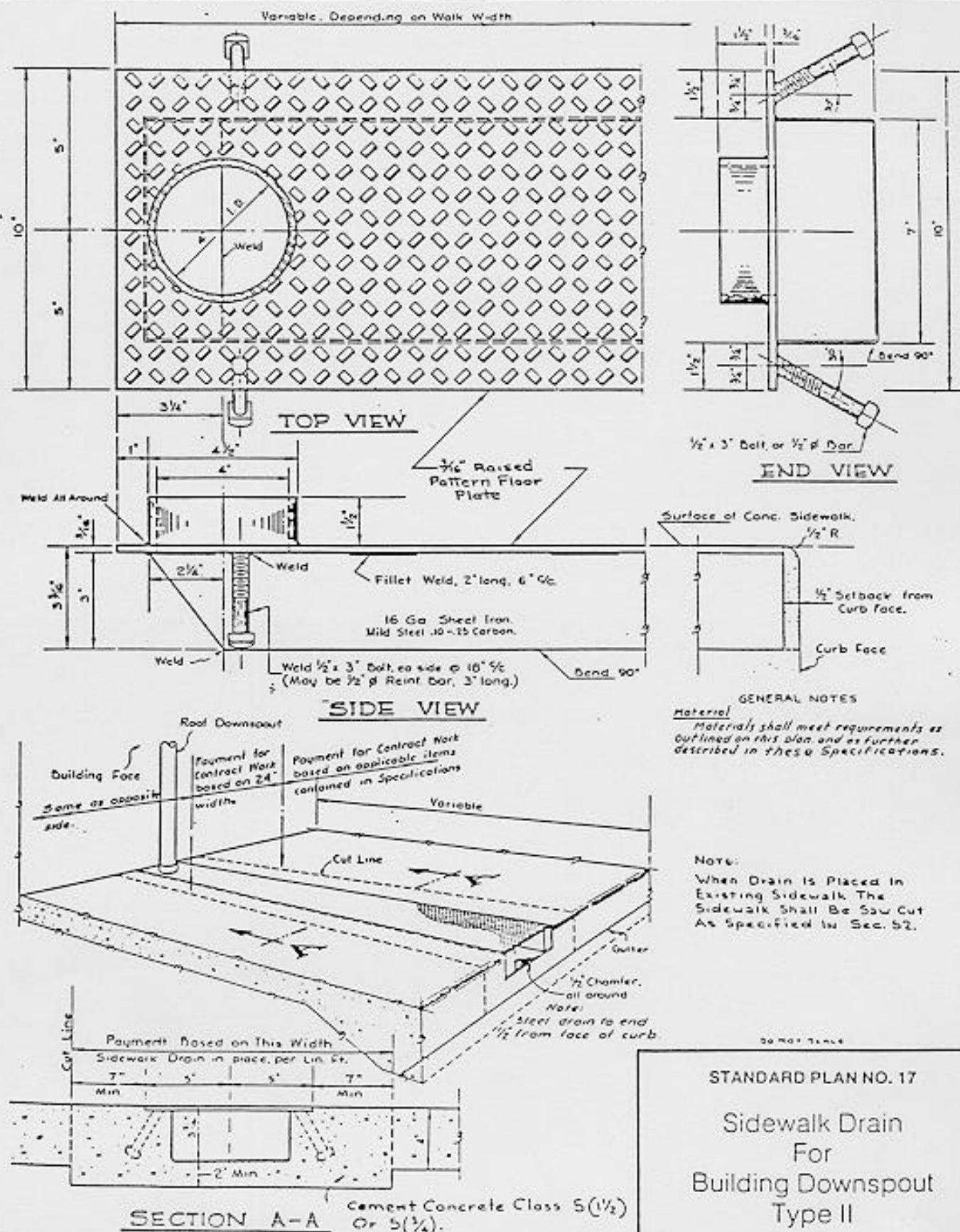


Note:
1. Steel plate to end 1/2" from face of curb.
2. Provide space between bldg. & plate for downspout.
3. When drain is placed in existing sidewalk the sidewalk shall be saw cut as specified in section 52.

Do Not Scale

STANDARD PLAN NO. 16

Sidewalk Drain For
Building Downspout
Type "1"



STANDARD PLAN NO. 17

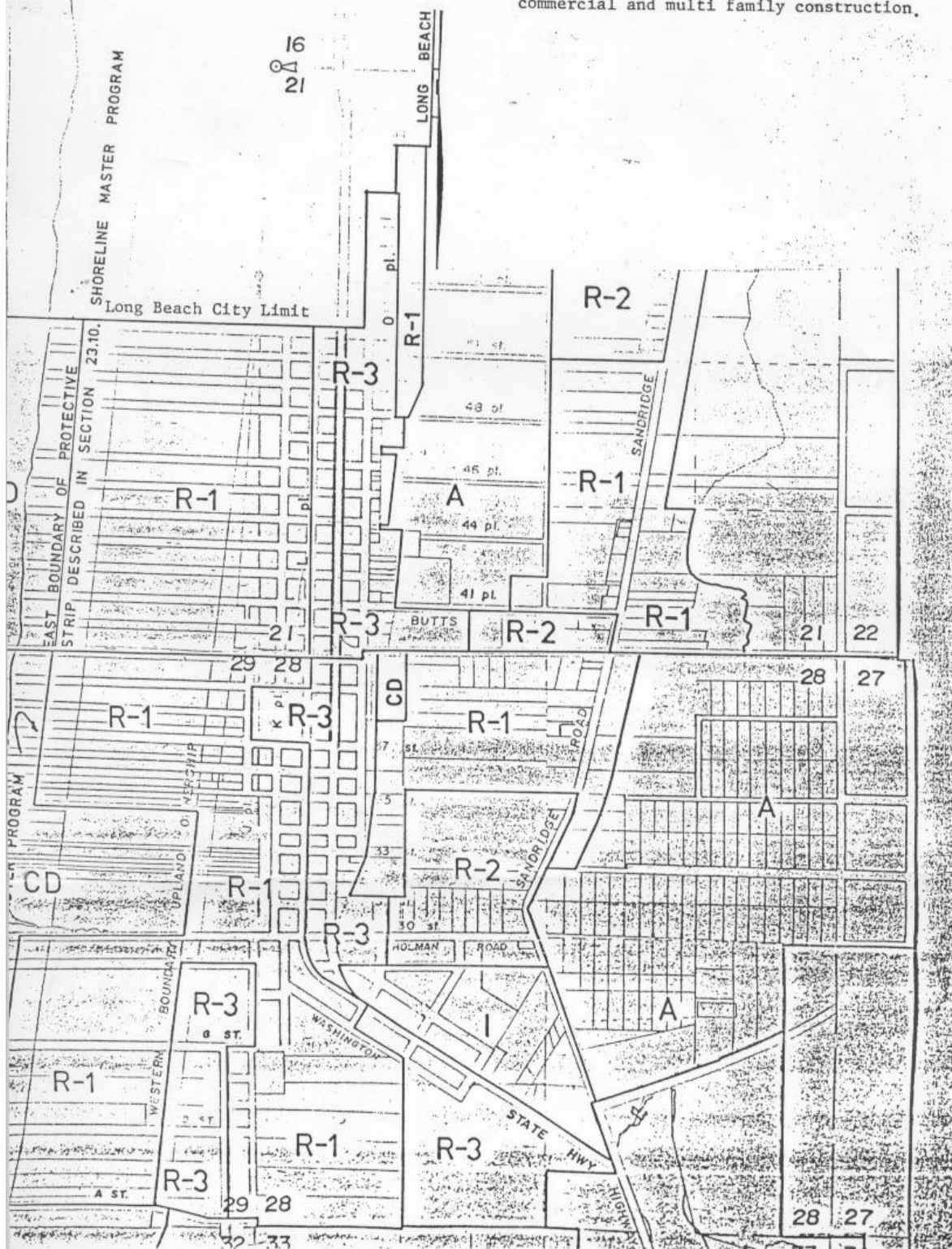
Sidewalk Drain
For
Building Downspout
Type II

SEAVIEW

LOCATION OF STREETS REQUIRING CURB AND
SIDEWALK IMPROVEMENTS FOR ALL NEW CONSTRUCTION

S.R. 103: Both sides from 37 th Street to
Long Beach City limit.

NOTE: On other streets, curb and sidewalks
are required when traffic and/or
drainage is adversely affected by new
commercial and multi family construction.



LOCATION OF STREETS REQUIRING CURB AND SIDEWALK IMPROVEMENTS FOR ALL NEW CONSTRUCTION

S.R. 103: Both sides from 251 Place to Bay Ave.

Pacific Way: Both sides from Bay Ave. to 262 Place.

Bay Avenue: Both sides from U Street to L Place.

Bay Avenue: North side from L Place to Ocean Beach

NOTE: On other streets, curb and sidewalks are required when traffic and/or drainage is adversely affected by new commercial and multi family construction.

