Ordinance No. 00063

(Council MInutes 96/02/20)

ORDINANCE NO. 63

AN ORDINANCE of the City Council of the City of Lakewood, Washington, approving and authorizing the Interim City of Lakewood Streets, Drainage and Right-of-Way Regulations

WHEREAS, in order for the City of Lakewood to address use of its Streets, Drainage and Right-of-Ways, it is appropriate for the City to have applicable regulations; and,

WHEREAS, because the City of Lakewood is a newly incorporated City, it has not had time to develop and adopt its final Streets, Drainage and Right-of-Way Regulations, however, in order to address the developmental needs of the City pending completion of its final Streets, Drainage and Right-of-Way Regulations, it would be advantageous for the City to have in place Interim Streets, Drainage and Right-of-Way Regulations.

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

Section 1. That the Interim City of Lakewood Streets, Drainage and Right-of-Way Regulations, a copy of which is attached hereto marked as Exhibit AA@ and incorporated herein by this reference, be, and the same hereby is approved and adopted as the Interim Streets, Drainage and Right-of-Way Regulations for the City of Lakewood and that a copy of the interim regulations shall be kept on file with the office of the City Clerk.

Section 2. That if any portion of this Ordinance including the attached Exhibit, or its application to any person or circumstance is held to be invalid, the remainder and its application to any other persons or circumstances shall be unaffected.

Section 3. That this Ordinance shall be in full force and effect five (5) days after publication of the Ordinance Summary and on February 28, 1996.

ADOPTED by the City Council this 20th day of February, 1996.

CITY OF LAKEWOOD

/S/

Bill Harrison, Mayor

Attest:

/S/

Alice M. Bush, CMC, City Clerk

Approved as to Form:

/S/

Daniel B. Heid, City Attorney

.....

CITY OF LAKEWOOD

INTERIM STREETS, DRAINAGE AND RIGHTS-OF-WAY REGULATIONS

ADOPTED

FEBRUARY 20, 1996

ACKNOWLEDGMENTS

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TABLE OF CONTENTS

STREETS, DRAINAGE AND RIGHTS OF WAY

CHAPTER	TITLE	PAGE NO.
12.03	STREET AND STORM DRAINAGE DESIGN & CONSTRUCTION STANDARDS.	1
12.03.010	Applicability.	1
12.03.020	Introduction	1
12.03.030	Design Elements	2
12.03.040	Functional Classification Elements	3
12.03.050	Access Control	10
12.03.060	Administration, Plans, Specifications, and Construction	13
12.03.070	References and Abbreviations	41
12.03.080	Standard Details	42
12.06	PRIVATE STREET STANDARDS. PART 1 - PRIVATE STREET STANDARDS	45
12.06.010	Purpose	47
12.06.020	Applicability	47
12.06.030	Environmental Considerations	47
12.06.040	Definitions	47
12.06.050	Severability	49
12.06.060	Street Types, Geometrics and Design Parameters	49
12.06.070	Signs	52
12.06.080	Driveways to City Streets	52
12.06.090	Compliance	52
12.06.100	Maintenance	53
12.06.110	Conditions of Recording	54
12.06.120	Private to Public Street Dedication	54
12.06.130	General Plan Formatting	54
12.06.140	Administration	57
12.06.150	Vesting	61
	PART II -EMERGENCY VEHICLE ACCESS	63
12.06.210	Purpose	63
12.06.220	Administration	64
12.06.230	EV Access Requirements	66

12.09	**OBJECTS WITHIN CITY RIGHTS-OF-WAY**	**69**
12.09.010	**Permission Required - Removal**	**69**
12.09.020	**Violation - Penalty**	**69**
CHAPTER	**TITLE**	**PAGE NO.**
12.12	**REFUSE ON RIGHT-OF-WAY**	**71**
12.12.010	**Vehicles - Escape of Load**	**71**
12.12.020	**Unlawful to Deposit Material on Right-of Way**	**71**
12.12.030	**Identification of Owner - Evidence of Dumping Material**	**71**
12.12.040	**Violation - Penalty**	**71**
APPENDIX/CHARTS		**73**
Appendix		**73**
Chart 1		**82**
TABLES		**83**
12.03-A	**Key to Generic Cross Section**	**83**
12.03-B	**Conceptual Local Road System**	**84**
12.03-1	**Principal Arterial Design Elements**	**85**
12.03-3	**Minor Arterial Design Elements**	**87**
12.03-4	**Geometric Design Criteria For Minor Arterials**	**90**
12.03-5	**Collector Arterial Design Standards**	**91**
12.03-6	**Geometric Design Criteria for Collector Arterials**	**94**
12.03-7	**Local Road Feeder Design Elements**	**95**
12.03-8	**Geometric Design Criteria For Local Road Feeder**	**98**
12.03-9	**Local Road Minor Design Elements**	**99**
12.03-10	**Geometric Design Criteria For Local Road Minor**	**102**
12.03-11	**Local Road Cul-De-Sac Design Elements**	**103**
12.03-12	**Geometric Design Criteria For Local Road Cul-De-Sacs**	**105**
12.03-13	**Roadway Intersection Design Standards**	**106**
12.03.14	**Driveway Intersection Design Standards**	**107**
ILLUSTRATIONS:		
A.	**Trash Rack Detail**	**108**
B.	**Flow Restrictor/Oil Pollution Control Device**	**109**
C.	**Catch Basin Inlet Detail**	**110**
D.	**Standard Drywell Detail**	**111**
E.	**Stormwater Infiltration Trench Section**	**112**
F.	**Standard Basin Detail**	**113**

G. Typical Closed Detention Pipe Detail 114
H. Siltation Fence Detail 115
I. Dispersal Trench Detail 116
J. Ditch Details 117
K. Solid Locking Lid 118
L. Median Detail 119
M. Shoulder Widening for Bus Turnout 120
N. Shoulder Details 121
O. Asphalt Concrete Wedge Curbs 122
P. Cement Concrete Curb and Gutter Details 123
Q. Sidewalk Section and Concrete Curb Detail 124
R. Curb Ramps in Vertical Curb 125
S. Curb Ramps in Rolled Curb 126
T. Rockwall Detail 127
U. Utility Patch Detail for All Utility Road Cuts 128
V. Permanent Cul-de-Sac 129
W. Temporary Cul-de-Sac 130
X. Right Angle "L" Intersection 131
Y. Intersection Detail 132
Z. Street Name Sign D3-1 Detail 133
AA. Stop Sign Detail 134
BB. Widening and Overlaying Detail 135
CC. Standard Monuments 136
DD. Pavement Marking Details 137
EE. Signal/Flasher Service Panel Detail 141
FF. Traffic Signal Standard Details 142
GG. Traffic Signal Head Alignment Detail 143

DESIGN CRITERIA & CROSS SECTIONS

Dead-end Cul-de-Sac 144
Option A 145
Option B 146
Option C 147
Option D 148
Street Sign for Private Roads 149
Dead-end Hammerhead 150

Chapter 12.03

STREET AND STORM DRAINAGE DESIGN AND CONSTRUCTION STANDARDS

Sections:

12.03.010 Applicability.
12.03.020 Introduction.
12.03.030 Design Elements.
12.03.040 Functional Classification Elements.
12.03.050 Access Control.
12.03.060 Administration, Plans, Specifications and Construction.
12.03.070 References and Abbreviations.
12.03.080 Standard Details.

12.03.010 Applicability.

All requirements contained in the City Street Standards, together with any and all amendments thereto, are applicable to all design and construction within City rights-of-way and rights-of-way that will be dedicated to the City.

12.03.020 Introduction.

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

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

This document is organized into seven principal sections:

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

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

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

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

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

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

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

G. **Shortened Designation.** These City Street Standards will be cited routinely in the text as the "Standards." Reference to the "City" will be cited routinely in the text and refers to the City Engineer or designee.

12.03.030 Design Elements.

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

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

A. **Functional Classification.** The first step in the design process is to identify the functional classification of the streetway. The functional classification[**s**] of existing City streets are established in Section 12.03.060. A narrative of the existing and future adjacent land use and environment must accompany the proposal for functional classifications of new facilities. This narrative should answer questions such as: Are

schools or parks nearby? What is the expected pedestrian and bicycle activity? Will the streetway serve an industrial or commercial site?

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

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

Intersection and driveway spacing guidelines encourage the preservation of capacity and safe operation of streetways. Table 12.03-13, "Streetway Intersection Design Standards", and Table 12.03-14, "Driveway Intersection Design Standards", provide the guidelines for intersection location and design. The "Site Development Regulations" should also be consulted.

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

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

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

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

12.03.040 Functional Classification Elements.

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

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

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

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

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

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

B. Classification of City Streets. All streets within the City shall be classified as principal arterials, minor arterials, collector arterials, local street feeders, local street minor, or local street cul-de-sac's pursuant to RCW 36.86.070.

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

PRINCIPAL ARTERIALS

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

MINOR ARTERIALS

STREET NAME	FROM	TO
Ardmore Drive SW	Steilacoom Boulevard SW	Whitman Avenue SW
Butte Drive SW	116th Street SW	104th Street SW
Custer Avenue SW	Steilacoom Boulevard SW	88th Street SW
Edgewood Avenue SW	North Gate Road SW	Washington Boulevard SW
Far West Drive SW	112th Street SW	Steilacoom Boulevard SW
Garnet Lane SW	Onyx Drive SW	83rd Avenue SW
Gravelly Lake Drive SW	Bridgeport Way SW	Steilacoom Boulevard SW
Hipkins Road SW	104th Street SW	Steilacoom Boulevard SW
Interlaaken Drive SW	Interlaaken Drive SW	Holly Hedge Lane SW
Lakeview Avenue SW	111th Street SW	Steilacoom Boulevard
Mount Tacoma Drive SW	Holly Hedge Lane SW	Lexington Avenue SW
Mount Tacoma Drive SW	Motor Avenue SW	Bridgeport Way SW
Murray Road SW	Fort Lewis Gate Entrance	I-5 Northbound On-ramps
North Gate Road SW	Nottingham Road SW	Edgewood Avenue SW

MINOR ARTERIALS CONTINUED

STREET NAME	FROM	TO
North Thorne Lane SW	Union Avenue SW	I-5 Northbound On-ramps
Nyanza Road SW	Gravelly Lake Drive SW (S)	Gravelly Lake Drive SW (N)
Pacific Highway SW	Gravelly Lake Drive SW	South Tacoma Way
Phillips Road SW	Steilacoom Boulevard SW	Onyx Drive SW
Short Lane SW	104th Avenue SW	Interlaaken Drive SW
Union Avenue SW	Berkeley Street SW	North Thorne Lane SW
Vernon Avenue SW	Veterans Drive SW	116th Street SW
Veterans Drive SW	Nottingham Avenue	Gravelly Lake Drive SW
Whitman Avenue SW	Motor Avenue SW	Ardmore Drive SW
Wildaire Road SW	Gravelly Lake Drive SW	59th Avenue SW
40th Avenue SW	100th Street SW	96th Street SW
83rd Avenue SW	Steilacoom Boulevard SW	Garnett Lane SW
84th Street S	South Tacoma Way	Tacoma Mall Boulevard S.
87th Avenue SW	Steilacoom Boulevard SW	Onyx Drive SW
93rd Street SW	Whitman Avenue SW	Bridgeport Way SW
96th Street S	40th Avenue SW	Lakewood East City Limits
100th Street SW	Gravelly Lake Drive SW	Bridgeport Way SW
104th Street SW	Butte Drive SW	Hipkins Road SW
108th Street SW	59th Avenue SW	Pacific Highway SW
111th Street SW	112th Street SW	Lakeview Avenue SW
112th Street SW	Gravelly Lake Drive SW	111th Street SW
112th Street SW	Military Road SW	Farwest Drive SW
150th Street SW	Murray Road SW	Lakewood East City Limits

COLLECTOR ARTERIALS

STREET NAME	FROM	TO
Alferetta Drive SW	Dekoven Drive SW	Meadow Road SW
Angle Lane SW	Elwood Drive SW	Hipkins Road SW
Avondale Road SW	Meadow Road SW	Gravelly Lake Drive SW
Berkeley Street SW	I-5 Southbound On-ramps	Portland Avenue SW
Bristol Avenue SW	Lakewood Mall	100th Street SW
Clover Creek Drive SW	Pacific Highway SW	Hillcrest Drive SW
Dekoven Drive SW	Meadow Road SW	Lake Grove Street SW
Dresden Lane SW	Elwood Drive SW	87th Avenue SW
Durango Street SW	Steilacoom Boulevard SW	B&I Parking Lot
Edgewood Avenue SW	Veterans Drive SW	North Gate Road SW
Elwood Drive SW	Angle Lane SW	Dresden Lane SW
Hillcrest Drive SW	Glenwood Avenue SW	Clover Creek Drive SW

COLLECTOR ARTERIALS CONTINUED

STREET NAME	FROM	TO
Holden Road SW	Military Road SW	Lake Louise Drive SW
Huggins Meyers Road SW	116th Street SW	112th Street SW
Idlewild Road SW	112th Street SW	104th Street SW
Interlaaken Drive SW	Veterans Drive SW	Lake Steilacoom Drive SW
John Dower Road SW	Steilacoom Boulevard	Custer Road W
John Dower Road W	Custer Road W	75th Street W
Lake City Boulevard SW	Veterans Drive SW	116th Street SW
Lake Grove Avenue SW	Waverly Avenue SW	Dekoven Drive SW
Lakewood Mall Boulevard SW	Lakewood Mall	Bridgeport Way SW
Lake Louise Drive SW	100th Avenue SW	Holden Road SW
Lake Louise Drive SW	Holden Road SW	104th Street SW
Lake Louise Drive SW	104th Street SW	Lake Louise Drive SW
Lake Louise Drive SW	Lake Louise Drive SW	100th Avenue SW
McChord Drive SW	New York Avenue SW	Bridgeport Way SW
Meadow Road SW	Dekoven Drive SW	Ardmore Drive SW
New York Avenue SW	Pacific Highway SW	McChord Drive SW
North Thorne Lane SW	Union Avenue SW	Portland Avenue SW
Nyanza Park Drive SW	Nyanza Road SW	Glenwood Avenue SW
Onyx Drive SW	Zircon Drive SW	87th Avenue SW
Onyx Drive SW	87th Avenue SW	Phillips Road SW
Onyx Drive SW	Phillips Road	Turquoise Drive SW
Phillips Road SW	Onyx Drive SW	Turquoise Drive SW
Portland Avenue SW	Berkeley Street SW	North Thorne Lane SW
Waverly Drive SW	Crescent Lane SW	Mount Tacoma Drive SW
West Thorne Lane SW	Union Avenue SW	Portland Avenue SW
Whitman Avenue SW	Ardmore Drive SW	Steilacoom Boulevard SW
Zircon Drive SW	Onyx Drive SW	Turquoise Drive SW
59th Avenue SW	Lakewood Mall	Gravelly Lake Drive SW
75th Street SW	75th Street W	Custer Road W
78th Street SW	Onyx Drive SW	91st Avenue SW
83rd Avenue SW	Washington Boulevard SW	112th Street SW
87th Avenue SW	Dresden Street SW	Steilacoom Boulevard SW
91st Avenue SW	78th Street SW	Zircon Drive SW
100th Street SW	Dekoven Drive SW	Gravelly Lake Drive SW
101st Street SW	Farwest Drive SW	100th Avenue SW
104th Street SW	Lake Louise Drive SW	Butte Drive SW
104th Street SW	Short Lane SW	Interlaaken Drive SW
112th Street SW	Farwest Drive SW	Butte Drive SW
112th Street SW	Huggins Meyers Road SW	Interlaaken Drive SW

D. Implementation Authority. The City Engineer is directed to implement the arterial designations described in this Chapter through the use of appropriate traffic control devices.

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

F. Functional Classification Definitions.

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

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

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

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

3. **Collector Arterials.** Collector arterials distribute trips from principal and minor arterials to the ultimate destination, or may collect traffic from local streets and channel it into the principal and minor arterials systems. They carry a low proportion of traffic traveling through the entire subarea; carry a high proportion of local traffic with an origin or destination within that area. Design year ADT is approximately 2,500 to 15,000. They may be on a somewhat meandering alignment and need not be particularly long or continuous.
Spacing is typically about 1/4 mile in developed areas. Collector arterials provide both land access service and traffic circulation within residential neighborhoods, commercial, and industrial areas. They may penetrate identifiable residential neighborhoods.

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

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

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

   a. **Local Street Feeder** serves as primary access to the development from the adjacent street system. It distributes traffic from the Local Street Minor in residential neighborhoods and channels it to the arterial system. There are usually no bus routes, with the exception of possible school buses. There is no direct lot access from local street feeders. It directly serves any principal traffic generators within the neighborhood, such as an elementary school or a church. It usually serves one moderate size neighborhood or a combination of a few small developments, rather than interconnecting two or more larger neighborhoods. It serves little, if any, through traffic generated outside the neighborhood. Typical ADT may range from about 400 to 1,500. Abutting residences are oriented away from the feeder.

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

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

12.03.050 Access Control.

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

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

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

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

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

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

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

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

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

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

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

6. Intersections within the subdivision should be of the "T" type; for lower speed facilities of minor or cul-de-sac classification "L" type intersections are acceptable.

7. Access to corner lots should be from the lesser-classified street, at greatest distance possible from the intersection.

8. The number of intersections should be minimized as much as possible, particularly as classification of the affected streets increases. Intersection spacing should be maximized wherever possible.

9. The City Public Works Department should be contacted regarding requirements for:
   - **a.** Channelization and Signing
   - **b.** Stop Control/Signalization
   - **c.** Drainage Treatment
   - **d.** Transit Stops
   - **e.** Temporary Driveways
   - **f.** Pedestrian Amenities (sidewalks, curb ramps, etc.)
   - **g.** Right-of-Way Dedication

Notwithstanding the requirements of this regulation, the number and location of intersections may be more restrictive than described herein if deemed necessary by the City.

The City shall base its determination on existing and projected traffic volumes and channelization and signalization on the existing City street, traffic, and turning movements generated by the existing and/or proposed project and other applicable traffic design criteria.

B. Intersection Meaning of Terms.

1. **Entering Sight Distance**. For stop and signal controlled intersections, distance each direction along the crossstreet sufficient to allow safe crossing and turning movements from the approach in question.

2. **Maximum Driveway Grade**. Allowable percentage grade of a driveway exclusive of the required landing grade area.

3. **Maximum Landing Grade**. Allowable grade of the section of the approach nearest the intersection.

4. **Minimum Angle**. Degree of acute angle between centerlines of intersecting streets or driveways.

5. **Minimum Centerline Offset**. Distance centerline to centerline of adjacent intersections, or from nearest end of turning streetway to centerline of adjacent intersection. Also, for driveways on opposite sides of the street, the distance between near edges of the driveway throats.

6. **Minimum Curb Radius**. Radius of the circular curve at each corner of the intersection formed by the face of curb or, if no curb is used, the edge of pavement. The actual radius to be used is subject to the turning requirements of the design vehicle.

7. **Minimum Driveway Spacing**. For spacing between driveways, distance between the nearside edges of adjacent driveway throats. For spacing from a street intersection, distance from nearside face of curb (or ROW line for residential applications) of adjacent street intersection to nearside edge of driveway throat. For spacing from property edge, distance from side lot line to nearside edge of driveway throat. Refer to Standard Details for street approaches.

8. **Minimum Property Line Radius**. Radius connecting the front property line (City ROW line) with the side lot line.

12.03.060 Administration, Plans, Specifications and Construction.

A. Definitions.

1. **"Applicant"** means the person, party, firm, corporation, or other legal entity or designee who proposed to do work regulated by these standards.
2. **"City"** means the City Engineer or his/her designee.
3. **"Engineer for Applicant"** means a professional civil engineer, currently licensed in the State of Washington, retained by and acting on behalf of the Applicant.
4. **"Surveyors for Applicant"** means a professional land surveyor, currently licensed in the State of Washington, retained by and acting on behalf of the Applicant.
5. **"W.S.D.O.T."** means the Washington State Department of Transportation.

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

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

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

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

Design Manual published by the Washington State Department of Transportation.

Hydraulic Manual published by the Washington State Department of Transportation.

Construction Manual published by the Washington State Department of Transportation.

1. **Bikeway**: Location, design, and construction shall be as approved by the City.

2. **Catch Basin**: Maximum spacing of structures for storm drainage conveyance lines running within an easement area shall be 200 feet. Structures shall have solid covers and locking lids when required by the City.

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

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

Maximum surface runs for storm drainage on the paved streetway surface shall be as follows:

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

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

(1) When overall structure height does not exceed 8 feet.

(2) When pipe sizes do not exceed 15 inches and connect at right angles to the long side of the structure; or 12 inches connecting to the short side.

(3) When all pipes tying into the structure connect at or very near to right angles.

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

(1) When overall structure height does not exceed 8 feet.

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

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

(1) When overall structure height does not exceed 15 feet.

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

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

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

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

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

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

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

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

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

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

6. **Crushed Surfacing Top Course:**

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

7. **Cul-De-Sacs**

   a. Permanent: See detail in Section 12.03.080 V.
   (1) Open ditch street sections will require a 55-foot right-of-way.

   b. Temporary: See detail in Section 12.03.080 W.
   (1) Minimum pavement width across bulb section. Additional paving outside of the normal streetway section will not be required. The paved streetway section shall be constructed to the property line.

(2) The following note shall be used: "Temporary cul-de-sac, fill unpaved portion of 40-foot radius with 2 inches minimum compacted depth crushed surfacing top course and slope at 2% towards the street and level to the thickened edge."

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

9. **Curb/Gutter**: See detail in Section 12.03.080 P.

10. **Dispersion Trench**: See detail in Section 12.03.080 I.

11. **Ditches**: See detail in Section 12.03.080 J.

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

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

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

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

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

All ditches and channels shall be designed with a minimum freeboard of .5 feet when the design flow is 10 cubic feet per second or less and 1 foot when the design discharge is greater than 10 cubic feet per second.

Ditches and channels outside City right-of-way will require a drainage easement. A 10-foot wide access easement along one side of the ditch or

channel may be necessary in addition to the normal easement width. Otherwise the easement width will be the width of the ditch or channel (measured from catch point to catch point) plus 5 feet on each side of the ditch or channel.

12. **Drainage**:
    - **a.** The storm drainage system shall be designed per current City standards.
    - **b.** Enclosed storm drainage will be required if:
        - **(1)** The street is classified as an arterial or local street feeder.
        - **(2)** The street gradient is six percent or more.
        - **(3)** A fifty foot right-of-way is proposed.
        - **(4)** The street serves a commercial development or a plat with lots smaller than one acre.
        - **(5)** The existing street has enclosed storm drainage.
    - **c.** Open ditches may be used if:
        - **(1)** The street is within a plat which has all lots greater than one acre unless any one of 1 through 5 above apply.
        - **(2)** The existing street has open ditches unless any one of 1 through 5 above apply.

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

14. **Drywell**: See detail in Section 12.03.080 D.

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

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

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

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

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

Exposed slopes shall be given appropriate permanent protection as soon after completion as practical. Hydroseeding, ground cover, riprap, or other methods approved by the City shall be installed when required by the City. This shall include, but is not limited to, side slopes of drainage basins, cut and fill slopes, easements, and tracts dedicated to the City for storm drainage and other purposes.

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

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

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

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

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

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

17. **Grades**

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

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

18. **Gravel Base:**

    a. Local street cul-de-sac and local street minor - 6 inches minimum compacted depth.
    b. Local street feeder, industrial parks, and all arterials - pavement structure design required and approval from the City.

19. **Intersections**: Intersection details drawn to a scale of 1" = 20' must be included as details on the street construction plans. The detail will show spot elevations every 25 feet on the street centerline, around the curb return, and grate elevations for drainage structures in the intersection. The intersection plan must be clearly detailed to show flow line grades and how surface drainage will be controlled at the intersection. Curb return data for lesser gradients shall be shown on the street drawings.

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

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

21. **Median**: See detail in Section 12.03.080 L.

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

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

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

    If the side slopes of basins are steeper than 4:1 or if the water depth exceeds 18 inches, the basin shall be fenced. The fence will be Type 1 chain link fence with pull wire in place of top rail. A 14-foot gate shall be provided for access to the basin. For basins requiring fencing, the fence shall be placed 1 foot inside the tract boundary or a minimum of 5 feet from the top slope catch point. Maximum side slopes shall not exceed 2:1.

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

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

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

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

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

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

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

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

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

All detention basins having a design capacity in excess of 10,000 cubic feet shall have a spillway whose overflow elevation of .5 feet higher than the maximum design water surface elevation. Retention basins having a design

capacity in excess of 10,000 cubic feet shall have a spillway meeting the above-noted criteria when so required by the City.

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

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

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

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

23. Pavement:

a. Local street cul-de-sac and local street minor - 2 inches minimum Class "B" asphalt concrete, unless the local street is a bus (school or transit) route, in which case the minimum shall be increased to 3 inches.

b. Local street feeder, industrial parks, and all arterials - pavement structure design required and approval from the City.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Pipes connecting into a structure shall match crown elevations.

27. **Retaining Walls**: See detail in Section 12.03.080 T.

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

ROCK WALL SECTION	MAXIMUM HEIGHT
Fill Section	8 Feet
Cut Section With Loosely Compacted Soils	8 Feet
Cut Section With Hardpan Soil Conditions	8 Feet

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

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

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

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

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

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

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

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

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

Pipe Diameter	Riprap Width	Pad Size Length	Depth
12"	36"	48"	12"
15"-18"	48"	60"	18"
24"-30"	48"	72"	24"

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

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

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

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

Ramp centerline shall be perpendicular to or radial to curb returns unless otherwise approved by engineer.

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

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

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

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

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

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

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

32. **Stop Signs**: See detail in Section 12.03.080 AA.

Stop signs shall be installed at locations determined by the City as soon as the street under construction is opened to vehicular use.

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

33. **Street Name Signs**: See detail in Section 12.03.080 Z.

34. **Street Lighting:** Street lighting is allowed within the City rights-of-way. Streetlighting shall be required on all collector and arterial streets, and at intersections of local street feeder streets with any other local street feeder or higher classification of street.

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

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

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

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

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

36. **Survey Monuments**: See detail in Section 12.03.080 CC.

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

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

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

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

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

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

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

39. **Transit Facilities:** See detail in Section 12.03.080 M.

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

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

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

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

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

All underground utility vaults shall be placed with one edge of the vault at or outside of the right-of-way line such that no portion of the vault is closer than two feet from any paved surface (shoulder and/or traveled way). All underground utility vaults (except electrical vaults) with a maximum width

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

A variance may be granted upon such conditions and terms as the Engineering Manager determines are necessary which shall include but not be limited to agreement to remove the utility vault at such time as the Engineering Manager determines street improvements are necessary.

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

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

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

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

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

C. Construction, Inspection and Plan Revisions.

1. Construction

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

2. **Street Inspections.**

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

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

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

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

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

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

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

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

5. **Materials Acceptance.**

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

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

c. Substitution of existing material for Gravel Base Class "B," the City may require a report from a materials testing laboratory verifying the quality of the material.

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

D. Financial Guarantees.

1. Maintenance Guarantees.

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

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

2. Construction Guarantees.

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

(1) An engineer's estimate shall be submitted to the City by the engineer detailing the quantity of work to be done in the City right-of-way. The estimate shall be based on current construction costs and shall be stamped and signed by the engineer.

An executed contract for the total project between a licensed, bonded contractor and the project Applicant may be substituted in lieu of the engineer's estimate.

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

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

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

E. Submittal Standards.

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

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

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

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

construction will be considered a resubmittal and will be reviewed prior to new submittals.

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

3. **Revisions to Approved Plans.**

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

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

4. **Design Plan Standards.**

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

   b. First submittal: Two (2) sets of prints of street plans, profiles, and detail sheets, including two (2) sets of prints or drainage area plans and drainage calculations. When required, the erosion and sedimentation control plans shall be submitted at this time.

   c. Final submittal: Original and one (1) set of prints of corrected street plans, profiles, detail sheets, drainage plans and calculations, and erosion and sedimentation control plans, when required by the City Engineer; quantity take-off and engineer's cost estimate of proposed construction when the project is to be bonded; together with the most recent review set previously marked up by the City reviewers. Upon the City's approval of the final submittal, the City will make in-house prints and a reproducible set and return the original set to the engineer. The City will retain this reproducible set utilizing it to make copies for public inspection and distribution as required.

d. All submitted work shall be stamped, signed, and dated by a licensed, professional engineer before review by the City.

e. All lettering shall be greater than one-eighth (1/8) of an inch high.

5. **Cover Sheet.**

a. Street construction plans submitted to the City for review and approval for streets in a proposed formal plat, short plat, large lot division, or work in existing City right-of-way or other projects which have a total street length in excess of 1,200 feet shall have a plan cover sheet.

b. The plan cover sheet shall be sheet 1 of the street construction plans and shall contain the following information:

(1) An overall site plan drawn to an appropriate scale; such as, 1" = 100', 1" = 200', or 1" = 400' showing the entire development and street system network including its connection to an existing City street or State highway.

(2) The project's storm sewer system along with easements, tracts, drainage facilities, all buffer and screening areas, off-site and on-site natural drainage courses or areas shall be shown on the overall site plan.

(3) Soil logs and soil log locations when an on-site storm drainage percolation system is proposed.

(4) A simple vicinity map dawn to a scale of 4" = 1 mile or other similar scale, with the north area pointed in the same direction as the cover sheet north arrow, showing project site, existing public street system and any other pertinent information.

(5) Standard notes which are applicable to the project.

(6) The Applicant's and the Applicant's engineer's name, address, and telephone number.

(7) Field topographic information including contour lines of the property in its natural undeveloped condition. City or U.S.G.S. topographic mapping must be field verified and supplemented with additional field topographic information when necessary to provide an accurate depiction of the property. Field topographic information submitted for the project's storm drainage plan does not have to be duplicated on

the street construction plans. A 5-foot contour interval shall be used except when the property is extremely flat or undulating and the cross slope varies or when pothole areas, wetlands, swales, or drainage courses exist on the property, then a topographic map with contour intervals of 2 feet will be required.

(8) When more than three (3) sheets are used, a table of contents shall be shown.

c. At the engineer's option, the information shown on the cover sheet may be shown on additional sheets.

6. **Horizontal Plan**. Horizontal plan elements shall include the following in addition to those items required on the cover sheet when a cover sheet is not required.

a. Street alignments with 100-foot stationing, preferably increasing to the north or east and reading from left to right, and stationing at points of curve, tangent, and intersection, with ties to section or quarter corners or other established and monumented survey control points at the intersection of the proposed street or streets and the existing City street or State highway. All lettering shall be right reading.

b. Section, Township, and Range on each page, plat, or project name.

c. Bearings on street centerline.

d. Curve data including radius, delta, and arc length on all horizontal lines.

e. Right-of-way lines and width for proposed street and intersecting streets. The plans shall show properly dimensioned lot lines and lot numbers to properly locate and dimension all tract and easement areas. Lot lines and lot numbers are requested to expedite plan review but are not required.

f. All topographic features within right-of-way limits and sufficient area beyond to resolve questions of setback, slope, drainage, access onto abutting property, and street continuations. This shall include, but is not limited to, ditch flow lines, all drainage structures with invert elevations, utility locations, fences, structures, existing curbing and approaches, pertinent trees and shrubbery, and other appurtenances which would affect the construction of the project.

g. Identification of all existing City streets and adjoining subdivisions when it is pertinent to the scope of the project.

h. Typical streetway cross-section(s) of proposed street.

i. Existing and proposed drainage features, indicating direction of flow, size, and kind of each drainage channel, pipe, and structure. The status of existing drainage structures must be clarified as either "existing-retain," "existing-abandon," or "existing-remove."

j. Scale: 1" = 50'. However, 1" = 100' shall be optional for development of lots one (1) acre or larger. Details for clarification may be shown on a convenient scale, normally 1" = 10' or 1" = 20'.

k. North arrow shall point to the top, left or to the right side of the sheet.

l. The limits of clearing, filling, and excavation

7. **Profile Elements**. Profile elements shall include the following:

a. Original ground line at 100-foot stations and at significant ground breaks and topographic features, with accuracy to within 0.2 feet on unpaved surface and 0.02 feet on paved surface.

b. Final street and storm drain profile with stationing the same as the horizontal plan, preferably reading from left to right, to show stationing of points of curve, tangent, and intersection of vertical curves, with elevations to 0.01 feet for each street in the project.

c. Street grade and vertical curve data; street to be measured at centerline.

d. Datum and all bench mark information must use established U.S.C. & G.S. control or City bench marks when there is an existing bench mark within one-half (1/2) mile of the project.

e. Vertical scale 1" = 5'. Clarifying details may be done to a convenient scale. Use 1" = 10' for vertical scale when horizontal plans are at 1" = 100'.

f. When streets end at a property line, the existing ground profile shall be continued a minimum of 200 feet to show that the proposed vertical alignment is reasonable.

g. When intersecting profile grades have a difference of 1% or less, a vertical curve is not required. All other vertical grade intersections will require a minimum 50-foot vertical curve.

8. **Detail Sheets**.

a. All applicable standard details.

b. Two cross sections of each retention/detention pond showing original ground, property lines, slope catch points, and all other pertinent information to adequately construct the pond.

c. Right-of-way cross sections as required by the City.

d. Construction recommendations from a soils report.

9. **Temporary Erosion and Sedimentation Control Plan**.

a. Construction sequence.

b. Applicable standard details.

c. Erosion control notes.

d. Limits of clearing, filling, and excavation.

e. Proposed haul routes.

f. Access locations.

10. **Specifications**. When required by the City, standard specifications and general provisions must be submitted with the street construction plans.

F. Administration.

1. **Requirements for Working in City Right-of-Way**.

a. Construction plans must be approved showing the limits and all details of the proposed work and a bond or other financial guarantee and liability insurance acceptable to the City has been submitted to cover all proposed work and a permit has been obtained from the City. A construction permit shall be obtained by the Applicant before work commences in City right-of-way.

b. Liability insurance in the form and amount determined necessary by The City shall be obtained by the Applicant or his contractor before

work commences in City right-of-way. Proof of proper insurance coverage shall be provided to The City upon request. Specific information, forms, etc., can be obtained from the City Engineer's Office.

c. An environmental checklist shall be submitted to the City Environmental Official for the work shown on the street and/or storm drainage construction plans submitted to the City for review and approval unless the proposed work is part of a project for which an environmental checklist has already been submitted. A declaration of non-significant impact or a final environmental impact statement must be issued and the appeal period expired before the project plans are given final approval by the City.

d. Street and/or storm drainage construction plans which are part of a larger project and require a Hearing Examiner decision or any other governmental approval will not be granted final approval until the Examiner's decision and conditions or other necessary governmental approval are final and the appeal period has expired.

2. **Street Acceptance Procedure.**

a. The City has no obligation to accept any private street into the City's street system for dedication or maintenance. It shall be the Applicant's responsibility to submit a preliminary site plan showing the street(s) proposed for dedication to the City and must receive the City's written approval before proceeding with street construction plans.

b. Street construction plans done in accordance with these Standards shall be submitted for review and must be approved by the City before street construction activity commences.

c. All construction work must be completed to City standards and/or financial guarantee(s) submitted to the City in the form and amount as required by these Standards before The City will accept the street for dedication and maintenance.

d. The Applicant must submit all necessary deeds, easements, etc., to the City for acceptance and recording by the Pierce County Auditor's Office.

e. Once the street has been dedicated to the City and accepted for maintenance, the street shall remain open for public use and may not be closed except by the City, as provided by RCW 47.48.010, 47.48.020, and 47.48.031.

3. **Standard Forms.**

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

b. One of the following forms for financial guarantees shall be used when making a submittal to the City:
(1) Performance Bond
(2) Bond to Insure Correction of Defective Improvements
(3) Assignment of Funds
Irrevocable Letters of credit or other types of financial guarantees may be approved if acceptable to the City Attorney's Office and City Manager's Office.

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

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

(1) Quit Claim Deed (Individual, Partnership, or Corporate) - By signing this document, the Grantor(s) quit any claim they have to the property described in the Quit Claim Deed.

(2) Storm Sewer Easement - This document conveys to The City the right to have and maintain a storm sewer system across a specific parcel of property.

(3) Slope and Utility Easement - This document conveys the right to have fill material or a cut slope and utilities on private property.

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

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

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

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

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

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

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

      (1) That there are special circumstances applicable to the subject property such as shape, topography, location, or surroundings that do not apply generally to the other property in the same vicinity;

      (2) That such variance is necessary for the preservation and enjoyment of a substantial property right possessed by other property in the same vicinity but which because of special circumstances is denied to the property in question;

      (3) That the granting of such variance will not be materially detrimental to the public welfare or injurious to the property or improvement in such vicinity in which the subject property is located;

(4) That such variance is based on sound engineering judgment, and that requirements for safety, function, and maintainability are fully met. The City may grant a variance to this Chapter only upon submittal of additional information, plans and/or design data by an engineer showing that the requested variance is safe, in the best interest of the public, and will not impose undue maintenance costs on City maintenance forces, if applicable.

b. The City Hearing Examiner May Impose Conditions on Variances. When granting a variance, the City Hearing Examiner shall determine that the circumstances do exist as required by Subsection 03.100.4.a of this Section, and attach specific conditions to the variance which will serve to accomplish the standards, criteria, and policies established by this Chapter.

5. **Appeals**. The Hearing Examiner's decision shall be final and shall only be appealable to Superior Court in accordance with the provisions of City of Lakewood Ordinance No. 95-13 Any person aggrieved by any Administrative decision of the City under this Chapter may appeal to the City Hearing Examiner pursuant to the provisions of the City Appeals Ordinance, as now enacted or hereafter amended.

6. **Severability**. If any part of these Design Standards and Specifications, as established by ordinance, shall be found invalid, all other parts shall remain in effect.

7. **Penalties.**

a. Failure to comply with these Standards will be cause for withholding or withdrawing approval of plans, forfeiture of bond or non-acceptance of the work by the City.

b. Any person, firm, or corporation who fails to obtain the necessary permit(s) as required by this Chapter shall be deemed guilty of a misdemeanor, and such violation shall be punishable by a fine of $250.00 for each offense and up to ninety (90) days in jail. Each person, firm, or corporation found guilty of a violation shall be deemed guilty of a separate offense for every day during any portion of which any violation of any provision of this Chapter is committed, continued, or permitted by such person, firm, or corporation and shall be punishable therefore as provided for in this Chapter.

12.03.070 References and Abbreviations.

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

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

B. **Standards Adopted.**

The following listed publications and manuals and any amendments, revisions, or supplements thereto are adopted for use on all street, bridge, and other construction projects administered by the Public Works Department:

1. State of Washington 1991 Standard Specifications for Street and Bridge Construction as published by the Washington State Department of Transportation and American Public Works Association No. M4-10;

2. Standard Plans for Street and Bridge Construction as published by the Washington State Department of Transportation No. M21-01;

3. Standard Specifications for Highway Bridges, Fourteenth Edition, 1989, as adopted by the American Association of State Highway and Transportation Officials, copyright 1989;

4. Interim Specifications - Bridges - 1990, as published by the American Association of State Highway and Transportation Officials, copyright 1990;

5. A Policy on Geometric Design of Highways and Streets, 1990, as published by the American Association of State Highway and Transportation Officials;

6. Hydraulics Manual as published by the Washington State Department of Transportation, 1989, No. M23-03;

7. Construction Manual, 1984, as published by the Washington State Department of Transportation under No. M41-01;

8. Local Agency Guidelines as published by Washington State Department of Transportation, No. M36-62;

9. Manual on Uniform Traffic Control Devices, 1985 Edition, published by the Federal Highway Administration, together with resolutions and modifications thereto for the State of Washington approved by the Washington State Department of Transportation.

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

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

D. **Abbreviations.**

1. "AASHTO" -- American Association of State Highway Transportation Officials
2. "ADT" -- Average Daily Traffic
3. "APWA" -- American Public Works Association
4. "DHV" -- Design Hourly Volume
5. "D Max" -- Maximum Degree of Curvature
6. "GIS" -- Geographic Information System
7. "LAG" -- Local Agency Guidelines
8. "MUTCD" -- Manual on Uniform Traffic Control Devices
9. "P.C." -- Point of Curvature
10. "P.I." -- Point of Intersection
11. "P.T." -- Point of Tangency
12. "RCW" -- Revised Code of Washington
13. "R Min" -- Minimum Radius
14. "ROW" -- Right-of-Way
15. "SEPA" -- (Washington) State Environmental Policy Act
16. "TWLT" -- Two-Way Left-Turn Lane
17. "UAB" -- Urban Arterial Board
18. "USC & GS" -- United States Coast and Geodetic Survey
19. "USGS" -- United States Geodetic Survey
20. "vpd" -- Vehicles Per Day
21. "WSDOT" -- Washington State Department of Transportation

12.03.080 Standard Details.

A. Trash Rack Detail.
B. Flow Restrictor/Oil Pollution Control Device.
C. Catch Basin Inlet Detail.
D. Standard Drywell Detail.
E. Stormwater Infiltration Trench Section.
F. Standard Basin Detail.

G. Typical Closed Detention Pipe Detail.
H. Siltation Fence Detail.
I. Dispersal Trench Detail.
J. Ditch Details.
K. Solid Locking Lid.
L. Median Detail.
M. Shoulder Widening for Bus Turnout.
N. Shoulder Details.
O. Asphalt Concrete Wedge Curbs.
P. Cement Concrete Curb and Gutter Details.
Q. Sidewalk Section and Concrete Curb Detail.
R. Curb Ramps in Vertical Curb.
S. Curb Ramps in Rolled Curb.
T. Rock Wall Detail.
U. Utility Patch Detail for All Utility Street Cuts.
V. Permanent Cul-de-Sac.
W. Temporary Cul-de-Sac.
X. Right Angle "L" Intersection.
Y. "T" Intersection Detail.
Z. Street Name Sign D3-1 Detail.
AA. Stop Sign Detail.
BB. Widening and Overlaying Detail.
CC. Standard Monuments.
DD. Pavement Marking Details.
EE. Signal/Flasher Service Panel Detail.
FF. Traffic Signal Standard Details.
GG. Traffic Signal Head Alignment Detail.

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Chapter 12.06

PRIVATE STREET STANDARDS

Sections:

PART I - PRIVATE STREET STANDARDS

12.06.010 Purpose.
12.06.020 Applicability.
12.06.030 Environmental Considerations.
12.06.040 Definitions.
12.06.050 Severability.
12.06.060 Street Types, Geometrics and Design Parameters.
12.06.070 Signs.
12.06.080 Driveways to City Streets.
12.06.090 Compliance
12.06.100 Maintenance.
12.06.110 Conditions of Recording.
12.06.120 Private to Public Street Dedication.
12.06.130 General Plan Formatting.
12.06.140 Administration.
12.06.150 Vesting.

PART II - EMERGENCY VEHICLE ACCESS

12.06.210 Purpose.
12.06.220 Administration.
12.06.230 EV Access Requirements.

PART III - CHARTS

12.06.310 Chart 1
Appendices

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PART I - PRIVATE STREET STANDARDS

12.06.010 Purpose.

The purpose of these Street Standards is to standardize private street design elements and to assure, so far as practical, that the minimum requirements of the public are met. These requirements include safety, welfare, convenience, pleasant appearance, and economical maintenance.

These Standards cannot provide for all situations. These Standards are intended to assist, but not to substitute for, competent work by professional engineers. It is expected that the professional engineer will bring to each project the best of his/her skills and abilities to see that the project is designed correctly and accurately.

12.06.020 Applicability.

These Standards shall apply to the review of all proposed divisions of land.

All private street and easements which serve as accesses to and within all divisions of land, including short subdivisions, shall meet these Standards.

12.06.030 Environmental Considerations.

An environmental checklist shall be submitted to the City Environmental Official for the work shown on the street and/or storm drainage construction plans submitted to the City for review and approval unless the proposed work is part of a project for which an environmental checklist has already been submitted or the work is categorically exempt per City Environmental Regulations or Chapter 197-11 WAC. A declaration of non-significant impact or a final environmental impact statement must be issued for the work and any comment period and appeal periods must have expired before the project plans are given final approval by the City.

12.06.040 Definitions.

A. **"AASHTO"** means American Association of State Highway and Transportation Officials.

B. **"Applicant"** means the person, party, firm or corporation who proposes to do the improvement work.

C. **"Average Daily Traffic or A.D.T."** means the total traffic during a given time period (in whole days), greater than one (1) day and less than one (1) year, divided by the number of days in that time period. To determine potential A.D.T. for a local access City street, it will be assumed, for the purposes of this Chapter only, that each dwelling unit or each existing or proposed segregated lot that accesses onto the street will generate ten (10) traffic trips per day. Traffic generation for other uses will be in accordance with the publication "Trip Generation", by the

Institute of Traffic Engineers, or other approved sources and will include the traffic generated by the proposed development unless otherwise noted. Projects submitted to the City for review and approval will be considered to be proposed projects.

D. **"Cul-De-Sac"** means a circular pavement symmetrical or offset about the centerline of a street.

E. **"City"** means the City Engineer or his or her designee.

F. **"Dwelling Unit"** means any building or portion thereof which contains living facilities, including provisions for sleeping, eating, cooking and sanitation for not more than one family.

G. **"Engineer"** means a professional engineer currently licensed by the State of Washington, retained by the Applicant, and acting on their behalf.

H. **"Gravel Surface"** means two inches of crushed surfacing top course per Washington State Department of Transportation specifications.

I. **"Land Surveyor"** means a professional land surveyor currently licensed by the State of Washington.

J. **"Maintenance"** means the regular and continual preservation of the private street and appurtenant features within the easement in an "as new" condition.

K. **"Median"** means the portion of a divided street separating the traveled way for traffic in opposing directions.

L. **"Paved Surface"** means two inches of "Class B" asphalt concrete pavement per Washington State Department of Transportation specifications, or six inches of portland cement concrete.

M. **"Private Street"** means a street which is owned, controlled, and maintained by one or more property owners.

N. **"Private Street Easement"** means an easement or parcel which creates a legal source of access from a public street to an existing or proposed lot or lots of record or project, across other parcels of property.

O. **"Standards"** means the City Private Street and Emergency Vehicle Access Standards.

P. **"Tract"** shall mean any parcel of land, lot, building site, or contiguous combination thereof devoted to or intended to be devoted to a principal use and any other uses customarily accessory thereto.

12.06.050 Severability.

If any part of these Standards shall be found invalid, all other parts shall remain in effect.

12.06.060 Street Types, Geometrics and Design Parameters.

A. Geometric and Design Criteria.

(See Charts No. 1 and No. 2, Sections 12.06.300 and 12.06.310.)

All private streets shall meet the same design and construction standards as the public City Streets.

Individual streets within the development shall be constructed in their entirety to the highest applicable design criteria, as specified in Chart 1 (Section 12.06.300).

Side street approaches shall constitute new streets for design purposes.

B. Vertical Clearance Requirements. All private streets shall have an unobstructed minimum vertical clearance of 13 feet 6 inches.

C. Bridges and Structures. All existing and proposed bridges and structures, including drainage structures, on private streets shall be capable of carrying a minimum design load of HS-20 per AASHTO "Standard Specifications for Highway Bridges." The Design and As-builts for all bridges shall be certified by a licensed structural engineer.

D. Utilities Location. Appropriate utility easements shall be provided on the proposed project or recorded with the Pierce County Auditor if utilities are placed outside the private street easement. Utility installation shall be the responsibility of the Applicant and shall not be installed above ground in a manner or location that will interfere with the traveled surface and shoulder area established in Chart 1 (Section 12.06.300).

E. Grades. Street grades in excess of twelve percent (12%) must be constructed with a portland cement concrete paved surface.

F. Owners to Maintain Streets -- Organization required to Guarantee Maintenance and Assessment of Costs.

All private streets subject to the terms of this Chapter shall be maintained by the owners of the property served by them and kept in good repair at all times. In order to insure the continued good repair, a declaration of covenant requiring maintenance of the private street shall be recorded with the Pierce County Auditor's office concurrent with the recording of the subdivision or plat.

The declaration of covenants, which may be in the form set forth in Appendix 4, shall include the following terms:

1. The agreement for maintenance shall be enforceable by any property owner served by the street.

2. A means shall be established for assessing maintenance costs equitably to property owners served by the private street.

3. The declaration of covenants shall run with the land.

4. "Maintenance" shall include, but not be limited to, street surfacing,sidewalks shoulders, gates, signs, storm drainage facilities, and vegetation control.

G. Storm Drainage Facilities. All storm drainage systems shall be designed by the Engineer in accordance with the City's "Site Development Regulations".

H. Cul-De-Sacs - Permanent.

1. See Appendix 5 for cul-de-sac detail.

2. The minimum outside diameter of a cul-de-sac with an island is 120 feet.

3. A twenty-four (24) foot wide (measured from outside easement line) one-way traveled surface must be provided around the cul-de-sac island.

4. New plants in cul-de-sac island shall be fire resistant.

I. Hammerheads.

1. See Appendix 6 for hammerhead detail.

2. Hammerheads are acceptable in lieu of cul-de-sacs on streets less than three hundred (300) feet in length which serve less than four (4) lots.

3. Cul-de-sacs must be constructed if the street is accessed by lots on both sides of the street.

J. Gates. A building permit issued by the City is required when gates are installed over private streets. In order for the City to issue the building permit, the following requirements must be met:

1. Gates which serve ten (10) or more dwelling units shall have an Opticom activation system or an equivalent and compatible system that is approved by the Fire Chief.

2. Gates shall have rapid-entry key capabilities compatible with the local fire district per UFC, Section 902.2.4.2.

3. All electrically-activated gates shall have default capabilities to the unlocked position.

4. The minimum clear width of a gate shall be compatible with the street required width.

5. Gates that might be obstructed by the accumulation of snow shall not be installed.

6. A vehicular turn-around must be provided in front of the gate.

The City shall provide notice to the Fire District plans for a new gate.

K. Medians. A street separated by a median shall have a minimum traveled surface width of twenty (20) feet on each side of the median except as specified in Section 12.06.230 B.

1. New plants in medians shall be fire resistant.

2. Fire hydrants must be located on both sides of the median or accessible from both sides.

L. Obstructions In/Adjacent to Easements.

1. Obstructions, including but not limited to fences, retaining walls, or landscaping materials, shall not be permitted within the easement.

2. Sight-obscuring objects must be located to provide entering sight distances as required in Chart No. 2 (Section 12.06.310).

3. Obstructions, including but not limited to, fences, retaining walls, power poles, utility boxes, telephone boxes, and/or landscaping material shall not be allowed in a manner or location that will interfere with the traveled surface and shoulder area as established on Chart No. 1 (Section 12.06.300).

M. Turn Arounds. Cul-de-sacs or intersections must be provided at a minimum of one thousand five hundred (1,500) feet measured from centerline to centerline.

12.06.070 Signs.

A. Speed Limit Signs.

1. If speed limit signs are desired by the Applicant or the property owners, they shall be installed by the Applicant and maintained by the property owners.

2. Speed limit signs shall be installed in accordance with the Engineer's recommendations.

B. Street Signs and Street Names. All private streets shall have signs installed in accordance with the City Streets Standards at the time of the Engineer's final inspection in accordance with Appendix 7. All private streets shall be named and/or numbered in accordance with the City Street Naming Ordinance.

Street name signs shall be maintained by the property owners. If a sign is damaged or stolen the property owners shall replace the sign within seven calendar days of notification by the City.

C. Fire lanes shall be installed by the applicant and maintained by the property owner. Signs and stripping locations shall be approved by the Fire Chief.

12.06.080 Driveways to City Streets.

Driveways shall be constructed in accordance with the most recent version of the City's "Site Development Regulations". Grading and restoration of the private street beyond the end of the driveway shall be performed by the Applicant to provide a smooth, passable, and safe transition.

12.06.090 Compliance.

A. Certification. All private streets shall be constructed by the Applicant and inspected by the Applicant's engineer who shall issue a letter of compliance to the Applicant with a copy to the City certifying:

1. The private street has been constructed in accordance with the Engineer's design and standards established by this Chapter.

2. The street signs are in place.

3. The storm drainage, if applicable, has been constructed in accordance with the Engineer's design.

4. The gate (if applicable) has been installed in conformance with Section 12.06.060 J.

5. Existing and new bridge structures, if any, comply with Section 12.06.060 C.

The compliance letter shall be stamped, signed, and dated by the Applicant's engineer and shall be worded as follows:

> "I have inspected the project and find that the private street and storm drainage as constructed for this project conform to the terms and conditions of the submitted design and requirements of City's Private Street and Emergency Vehicle Access Standards and the City's Site Development Regulations", and that the appropriate street signs are in place."

A revised set of plans showing alterations to the previous accepted plans must be submitted with the letter of compliance.

B. Completion. All private streets must be completed and the letter of compliance submitted to the City or a financial guarantee must be submitted to the City in the amount of one hundred twenty-five (125) percent of the construction cost prior to plat approval.

The street(s) within a short plat, large lot, or formal plat must be constructed prior to the final inspection and approval of occupancy of any structures constructed within the plat, except for model home permits as authorized by the City Subdivision Code.

A note shall be placed on the face of the plat which states:

> "No building permits will be issued on any lots in this plat (except for model home permits as authorized by the City Subdivision Code) until the private street(s) have been constructed and a letter certifying their compliance to the Private Street and Emergency Vehicle Access Standards is on file with the City.

12.06.100 Maintenance.

All private streets and sidewalks subject to the terms of this Chapter shall have a Street Maintenance Covenant as per Appendix 4 recorded with the Pierce County Auditor's Office prior to or concurrent with the recording of the subdivision or plat. Private streets or easements existing prior to the effective date of this Chapter will be exempted from the Street Maintenance Covenant. Any new private street shall conform to these Standards.

The Street Maintenance Covenant attached to this Chapter is for illustrative purposes only and is a non-inclusive example.

Maintenance of the street shall include but not be limited to street surfacing, shoulders, gates, signs, storm drainage facilities, and vegetation control.

12.06.110 Conditions of Recording.

Prior to recording a plat, the Applicant shall dedicate private street easements to the City in the event of formation of a Road Improvement District (R.I.D.).

If private street easement widths are insufficient to allow dedication to the City, then a note will be placed on the face of the plat stating that "Future dedication of the private streetway to the City may require the dedication of additional right-of-way."

The recorded plat shall contain or incorporate a street maintenance covenant which shall be substantially in the form as indicated in Appendix 4.

12.06.120 Private to Public Street Dedication.

A. The City has no obligation to accept any private street into the City street system for dedication or maintenance. It shall be the Applicant's responsibility to submit a preliminary site plan showing the street(s) proposed for dedication to the City and the Applicant must receive the City's written approval before proceeding with street construction plans.

B. Street construction plans done in accordance with the most recent version of the City Street Standards shall be submitted for review and must be approved by the City before street construction activity commences.

C. All construction work must be completed to City standards before the City will accept the street for dedication and maintenance.

D. The Applicant must submit all necessary deeds, easements, etc., to the City for acceptance and recording by the Pierce County Auditor's Office.

E. Once the street has been dedicated to the City and accepted for maintenance, the street shall remain open for public use and may not be closed except by the City, as provided by RCW 47.48.010, 47.48.020 and 47.48.031.

F. Right-of-way widths must conform to the requirements of the most recent version of the City Street Standards.

12.06.130 General Plan Formatting.

A. Formatting.

1. Plan profile sheets and plan sheets shall use a sheet size of 24" x 36". Original sheets shall be mylar, tracing paper, or equal.

2. All submitted design work shall be stamped, signed, and dated by a licensed professional engineer before review by the City.

3. Construction plans for streets accessing State highways shall be submitted by the Applicant's engineer directly to the Washington State Department of Transportation. The Applicant's engineer shall comply with all requirements agreed upon between Applicant and the Washington State Department of Transportation. A signed agreement or approval for the intersection or street approach must be obtained from the State by the Applicant before final plan acceptance will be granted by the City. A copy of the approved plan from the Washington State Department of Transportation shall be submitted to the City for their records.

B. Cover Sheet. Street Construction plans submitted to the City for review for streets in a proposed formal plat, short plat, or large lot division which have a total street length in excess of 1,200 feet shall have a plan cover sheet.

The plan cover sheet shall be the first sheet of the street construction plans. The cover sheet shall contain the following information:

1. An overall site plan drawn to an appropriate scale; such as , 1" = 100', 1" = 200' or 1" = 400' showing the entire development and street system network including its connection to an existing City street or State highway.

2. The project's storm sewer system along with easements, tracts, drainage facilities, all buffer and screening areas, off-site and on-site natural drainage courses or areas shall be shown on the overall site plan.

3. Soil logs and soil log locations when an on-site storm drainage percolation system is proposed.

4. A simple vicinity map drawn to a scale of 4" = 1 mile or other similar scale, with the north arrow pointed in the same direction as the cover sheet north arrow, showing project site, existing public street system, and other pertinent information.

5. Standard notes which are applicable to the project.

6. The Applicant's and his/her engineer's names, addresses and telephone numbers.

7. Field topographic information including contour lines of the property in its natural undeveloped condition. City or U.S.G.S. topographic mapping must be field verified and supplemented with additional field topographic information when necessary to provide an accurate depiction of the property. Field topographic information submitted for the project's storm drainage plan does not have to be duplicated on the street construction plans. A 5-foot contour interval shall be used except when the property is extremely flat or undulating and the cross slope varies or when pothole areas, wetlands, swales, or drainage courses

exist on the property, then a topographic map with contour intervals of 2 feet will be required.

8. When more than three sheets are used, a table of contents shall be shown on the cover sheet.

9. When the street and/or storm drainage construction plans for a project are outside the boundary of a formal plat, the legal description of the street shall be included on the plans along with the name and address of the actual property owner(s).

C. **Horizontal Plan.** Horizontal plan elements shall include the following in addition to those items required on the cover sheet when a cover sheet is not required.

1. Street alignments with 100-foot stationing, preferably increasing to the north or east and reading from left to right, and stationing at points of curve, tangent, and intersection, with ties to Section or quarter corners or other established and monumented survey control points at the intersection of the proposed street or streets and the existing City street or State highway. All lettering shall be right reading.

2. Section, township, and range on each page; plat or project name.

3. Bearings on street centerline.

4. Curve data including radius, delta, and arc length on all horizontal lines.

5. Easement lines and width for proposed street and intersecting streets. The plans shall show properly dimensioned lot lines and lot numbers to properly locate and dimension all tract and easement areas. Lot lines and lot numbers are requested to expedite plan review but are not required.

6. All topographic features shall be within easement limits and sufficient area beyond to resolve questions of setback, slope, drainage, access onto abutting property, and street continuations. This shall include, but is not limited to, ditch flow lines, all drainage structures with invert elevations, utility locations, fences, existing curbing and approaches, pertinent trees and shrubbery, and other appurtenances which would affect the construction of the project.

7. Typical streetway cross-section(s) of proposed street.

8. Existing and proposed drainage features, indicating direction of flow, size, and kind of each drainage channel, pipe, and structure. The status of existing drainage structures must be clarified as either "existing-retain," "existing-abandon," or "existing-remove."

9. Scale: 1" = 50' through 1" = 10'. Details for clarification may be shown on a convenient scale, normally 1" = 10' or 1" = 20'. Projects which have sewer utilities must use 1" = 50'.

10. North arrow shall point to the top, left or to the right side of the sheet.

11. All miscellaneous details such as drainage basins, pipe details, construction details, etc.

D. Profile Elements. Profile elements shall include the following:

1. Original ground line at 100-foot stations and at significant ground breaks and topographic features, with accuracy to within 0.2 feet on unpaved surface and 0.10 feet on paved surface.

2. Final street and storm drain profile with stationing the same as the horizontal plan, preferably reading from left to right, to show stationing of points of curve, tangent, and intersection of vertical curves, with elevations to 0.10 feet for each street in the project.

3. Street grade and vertical curve data; street to be measured at centerline.

4. Datum and all bench mark information must use established United States Coast and Geodetic Survey control or City bench marks when there is an existing bench mark within one-half (1/2) mile of the project.

5. Vertical scale 1" = 5'. Clarifying details may be done to a convenient scale. Use 1" = 10' for vertical scale when horizontal plans are at 1" = 100'.

12.06.140 Administration.

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

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

2. Plans shall be reviewed by the City in order of the date they were submitted. Previously-accepted plans submitted to the City for a revision shall be considered as new submittals. Accepted plans requiring modifications which are under construction shall be considered as resubmittals, and shall be reviewed prior to new submittals.

3. First submittal: Two sets of prints of street plans, profiles, and detail sheets, including two sets of prints of drainage area plans and drainage calculations. When required, the erosion and sedimentation control plans shall be submitted at this time.

4. Final submittal: The original mylars, one set of revised prints, corrected street plans, profiles, detail sheets, drainage plans and calculations, and erosion and sedimentation control plans, together with the most recent review set previously marked up by the City reviewers.

5. Plans and revisions to previously accepted plans must be submitted, reviewed, and accepted by the City prior to construction.

B. Fees. Review fees shall be as indicated in the City's Fee Resolutions.

C. Variances. The City Hearings Examiner shall have the authority to grant a variance from the provisions of this Chapter, when, in the opinion of the City Hearings Examiner, the conditions as set forth in Subsection 06.130.C.1 below have been found to exist. In such cases a variance may be granted which is in harmony with the general purpose and intent of this Chapter so that the spirit of this Chapter shall be observed, public safety and welfare secured, and substantial justice done.

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

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

a. That there are special circumstances applicable to the subject property such as shape, topography, location, or surroundings that do not apply generally to the other property in the same vicinity;

b. That such variance is necessary for the preservation and enjoyment of a substantial property right possessed by other property in the same vicinity but which because of special circumstances is denied to the property in question;

c. That the granting of such variance will not be materially detrimental to the public welfare or injurious to the property or improvement in such vicinity in which the subject property is located;

d. That such variance is based on sound engineering judgment, and that requirements for safety, function, and maintainability are fully met. The City may grant a variance to this Chapter only upon submittal of

additional information, plans and/or design data by an engineer showing that the requested variance is safe, in the best interest of the public, and will not impose undo maintenance costs on City maintenance forces, if applicable.

2. **City Hearings Examiner May Impose Conditions on Variances**. When granting a variance, the City Hearings Examiner shall determine that the circumstances do exist as required by subsection C.1. of this section, and attach specific conditions to the variance which will serve to accomplish the standards, criteria, and policies established by this Chapter.

D. Appeals. Any person aggrieved by any act or decision of the Examiner under this Chapter may appeal to the Council pursuant to the provisions of City Appeals Ordinance, as now enacted or hereafter amended.

E. Inspections. The City reserves the right to enter onto the property during construction to inspect the clearing and grading operation as authorized by the latest version of the City "Site Development Regulations".

The City reserves the right to periodically inspect all private streets for fire and emergency vehicle access.

F. No Protest R.I.D. Covenant. The Applicant must form a homeowners' association and execute a "No Protest R.I.D. Covenant" (Declaration of Covenant and Irrevocable Power of Attorney) as contained in the Appendix 1. If the association fails to maintain the street, the City reserves the right to execute the "No Protest R.I.D. Covenant" which will allow the City to assess the members of the homeowners' association the monies necessary to construct the street to City standards.

Upon completion of the street construction to City standards and dedication of rights-of-way, the City will accept the street into the City street system for maintenance.

G. Enforcement.

1. The Department shall have authority to enforce this Chapter. The Department is authorized to issue notices of civil infraction pursuant to the provisions of the City's enforcement ordinance, and/or institute legal actions in any court of competent jurisdiction. Recourse to any single remedy shall not preclude recourse to any of the other remedies.

Each violation of this Chapter, approval or order issued pursuant to this Chapter, shall be a separate offense, and, in the case of a continuing violation, each day's continuance shall be deemed to be a separate and distinct offense. All costs,

fees, and expenses in connection with enforcement actions may be recovered as damages against the violator.

2. Enforcement actions shall include civil infractions and actions for damages and restoration.

   a. The Department may bring appropriate actions at law or equity, including actions for injunctive relief.

   b. Any person, firm or corporation who violates any provision of this Chapter shall be subject to a Class 1 civil infraction citation. A person found to have committed a Class 1 civil infraction shall be assessed a monetary penalty at a maximum of two hundred fifty dollars per day per violation.

   c. Notice of Civil Infraction: Civil infractions shall be initiated by issuance, service, and filing of a notice of civil infraction pursuant to the provisions of the City's Enforcement Ordinance.

3. Any person, firm, or corporation found to have violated any provision of this Chapter shall be guilty of a misdemeanor. Any person, firm, or corporation who knowingly makes a false statement, representation or certification in any application, record or other document filed or required to be maintained under this ordinance or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device, record or methodology required to be maintained pursuant to this Chapter shall be guilty of a misdemeanor.

H. Financial Guarantees. Financial guarantees will be held by the City until the letter of compliance as specified in Section 12.06.090 A. has been received by the City.

Financial guarantees less than $5,000.00 must be by assignment of funds.

Standard forms are available from the City.

All financial guarantees must remain valid until released by the City and shall not be subject to an expiration or cancellation date.

I. Reimbursement by Other Property Owners. The City hereby adopts RCW 35.72, "Contracts for Street Projects." When the City requires the Applicant to make off-site street improvements and an adjacent property owner benefits from the improvement, reimbursement to the applicant making the improvement or participating in the cost thereof shall be in accordance with RCW 35.72.

The City is authorized to retain administrative and overhead costs from the reimbursement cost, not to exceed ten (10) percent of the total funds. The

Applicant must notify the City that the project is to be administered in accordance with this provision and RCW 35.72, and shall furnish the City with all information necessary to establish an assessment reimbursement area.

The proration of cost shall be based on the traffic volume generated by the original project compared to the traffic volume generated by each subsequent project within the assessment reimbursement area. Property which has already been subdivided or developed will not be included in the assessment reimbursement area. Each subsequent Applicant shall pay to the previous Applicant, a proportionate share of the costs of the original improvement work, minus administrative and overhead costs incurred by the City.

12.06.150 Vesting.

This Chapter shall be prospectively applied from the date it becomes effective. Only fully completed applications, as provided for in RCW 19.27.095 and RCW 58.17.033, shall be considered under the building permit, subdivision, short subdivision, zoning, or other land use control ordinance in effect on the date of filing a completed application.

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PART II - EMERGENCY VEHICLE ACCESS

12.06.210 Purpose.

Emergency vehicle access shall be provided from a public or private street to a parcel(s) of land that has a structure(s) on it. This access is exempt from any normal setbacks established for public or private streets. Emergency vehicle access shall be provided and maintained in accordance with the provisions of these Standards.

A. Abbreviated Designation. Emergency vehicle access will be cited routinely in the text as the "EV Access."

B. Applicability. EV Access shall be required for every building hereafter constructed or installed when any portion of an exterior wall of the first story is located more than one hundred fifty (150) feet from the edge of the driving surface of the private or public street providing access to the parcel(s) of land on which that building is located as measured by an approved route around the exterior of the building.

C. Exemptions.

1. When buildings are protected with an approved automatic fire sprinkler system, the provisions of this section may be modified by the City after conferring with the local fire chief.

2. When an EV Access cannot be installed in conformance with these Standards due to topography, waterways, nonnegotiable grades, or other similar conditions, the City, after conferring with the local fire chief, may allow an exemption to these Standards by requiring additional fire protection as specified in Section 10.301(b) of the most current edition of the Uniform Fire Code as adopted by the City.

3. All common residential accessory buildings similar to Group M-1 occupancies (private garages, carports, sheds, some agricultural buildings, tanks, towers and fences over six feet tall) as defined by the most current edition of the Uniform Building Code as adopted by the City.

4. A one-time expansion, remodel, or alteration of existing uses or structures if the proposed change does not exceed twenty-five percent (25%) of the floor area of the existing use or structure.

D. Environmental Considerations. When an environmental checklist is required, it shall be submitted to the City Environmental Official for the work shown on the EV Access construction plans. Before the project plans are given final approval by the City, a declaration of non-significance or a final environmental impact statement must be issued, and all appeal periods must have expired.

E. Definitions.

1. **"Building"** means any structure used or intended for supporting or sheltering any use or occupancy.

2. **"Dwelling"** means any building or portion thereof which contains not more than two dwelling units.

3. **"Dwelling Unit"** means any building or portion thereof which contains living facilities, including provisions for sleeping, eating, cooking, and sanitation for not more than one family.

4. **"Emergency Vehicle Access"** means an all weather drivable surface constructed and maintained in accordance with this Chapter, that provides emergency access between a public or private street and one hundred fifty (150) feet of all portions of an exterior wall of the first story of any structure requiring EV Access as measured by an approved route around the exterior of the building.

12.06.220 Administration.

A. Submittal Procedure. A site plan shall be submitted to the City and Fire Chief in accordance with the site plan submittal standards of the proposed building permit. Site plan details shall include, but not be limited to, location and size of the EV Access, location of structures, and parcel or lot configuration.

B. Fees. Fees for EV Access review are set by separate Resolution adopted by the City Council.

C. Variances. The City Hearings Examiner shall have the authority to grant a variance from the provisions of this Chapter, when, in the opinion of the City Hearings Examiner, the conditions as set forth in Subsection 06.220.C.1 below have been found to exist. In such cases a variance may be granted which is in harmony with the general purpose and intent of this Chapter so that the spirit of this Chapter shall be observed, public safety and welfare secured, and substantial justice done.
Prior to the public hearing on any proposed variance, the Hearing Examiner shall notify the fire district of the hearing and request comments and concerns that the fire district may have about the variance.

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

a. That there are special circumstances applicable to the subject property such as shape, topography, location, or surroundings that do not apply generally to the other property in the same vicinity;

b. That such variance is necessary for the preservation and enjoyment of a substantial property right possessed by other property in the same vicinity but which because of special circumstances is denied to the property in question;

c. That the granting of such variance will not be materially detrimental to the public welfare or injurious to the property or improvement in such vicinity in which the subject property is located;

d. That such variance is based on sound engineering judgment, and that requirements for safety, function, and maintainability are fully met. The City may grant a variance to this Chapter only upon submittal of additional information, plans and/or design data by an engineer showing that the requested variance is safe, in the best interest of the public, and will not impose undo maintenance costs on City maintenance forces, if applicable.

2. City Hearings Examiner May Impose Conditions on Variances.

When granting a variance, the City Hearings Examiner shall determine that the circumstances do exist as required by Subsection 06.220.C.1 of this section, and attach specific conditions to the variance which will serve to accomplish the standards, criteria, and policies established by this Chapter.

D. Appeals. Any person aggrieved by any act or decision of the Examiner under this Chapter may appeal to the Council pursuant to the provisions of City Appeals Ordinance, as now enacted or hereafter amended.

E. Inspections. The City reserves the right to enter onto the property during construction and after completion of the EV Access to inspect it for compliance with the conditions of the permit.

The City reserves the right to periodically inspect all EV Accesses.

F. Enforcement. The Applicant must have the EV Access constructed in compliance with the conditions of the permit before the project will receive final inspection approval.

Prior to issuance of the occupancy permit on commercial structures, a letter of compliance shall be submitted to the City verifying that the EV Access has been completed to the standards in this document.

Failure to construct and/or maintain the EV Access as approved, will result in on-site inspections and potential citation under the current edition of the Uniform Fire Code.

12.06.230 EV Access Requirements.

A. **Length.** If an EV Access is required, it shall extend from the public or private street to within one hundred fifty (150) feet of all portions of an exterior wall of the first story of any structure requiring said EV Access as measured by an approved route around the exterior of the building.

B. **Width.** EV Access serving not more than two dwelling units shall not be less than fifteen (15) feet. EV Access for all other projects shall not be less than 20 feet with no parking allowed. Twenty-six (26) feet with parking on one side and thirty-two (32) feet with parking on both sides.

C. **Vertical Clearance.** EV Access shall have an unobstructed vertical clearance of not less than 13 feet 6 inches. The City, after conferring with the local fire chief, may allow a reduction in the vertical clearance, provided such reduction does not impair access by emergency vehicles, and approved signs are installed and maintained indicating the established vertical clearance.

D. **Construction Guidelines.** EV Access shall be designed and maintained to support the imposed loads of fire apparatus and shall be provided with a surface so as to provide all-weather driving capabilities. Individual single family EV Access surface treatment may be gravel. Multi-family and higher uses must be paved.

E. **Turning Radii.** A minimum outside turning radius of forty-five (45) feet shall be provided for all EV Access.

F. **Turnarounds.** A dead end EV Access in excess of one hundred fifty (150) feet in length shall be provided with a turnaround conforming as found in Appendix 5 and 6 of these Standards.

A turnaround shall be provided within one hundred fifty (150) feet of the end of the EV Access.

G. **Bridges and Structures.** All bridges and structures, including drainage structures, on an EV Access shall be capable of carrying a minimum design load of HS-20 per AASHTO "Standards Specified for Highway Bridges". The design and as-builts for all bridges shall be certified by a licensed structural engineer.

H. **Gates (If Applicable).** A building permit issued by the City is required when gates are installed over private streets. In order for the City to issue the building permit, the following requirements must be met:

1. Locked gates shall have rapid entry capabilities compatible with the local fire district requirements.

2. Gates which serve ten (10) or more dwelling units will have an Opticom activation system or an equivalent and compatible system that is approved by the Fire Chief.

3. All electrically-activated gates will have default capabilities to the unlocked position.

4. The minimum clear width of a gate shall be compatible with the required width of the EV Access.

5. Gates that might be obstructed by the accumulation of snow shall not be installed.

The City shall provide notice to the appropriate Fire District for a new gate.

I. Number of Access. More than one EV Access may be required for commercial developments when it is determined by the City that access by a single street may be impaired by vehicle congestion, condition of terrain, climatic conditions, or other factors that could limit access, unless mitigation acceptable to the City is provided.

J. Grade. The maximum street grade (vertical profile grade) of an EV Access shall be fifteen (15) percent. All sections of EV Access with grades of over twelve (12) percent shall be paved with 0.17 feet, compacted depth, of asphalt concrete.

K. Obstruction. The required width of an EV Access shall not be obstructed in any manner, including parked vehicles. Minimum required widths and clearances established under these standards shall be maintained at all times.

L. Signs. When required by the City, approved signs or other approved notices shall be provided and maintained for EV Access to identify such streets and prohibit the obstruction thereof, or both. "No parking - Fire Lane" signs shall be installed using Fire Districts Requirements.

M. Approval of EV Access Location. Plans for all EV Access shall be approved by the Fire Chief and the City before a building permit is issued. All construction for the EV Access must be completed prior to City approval of the final building inspection.

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Chapter 12.09

OBJECTS WITHIN CITY RIGHTS-OF-WAY

Sections:

12.09.010 Permission Required - Removal.
12.09.020 Violation - Penalty.

12.09.010 Permits Required - Removal.

A. No person, organization, or agency shall place, erect, or install any object of any nature whatsoever, within a City street right-of-way without a permit issued by the Engineering Manager, and any such object now in place within a City street right-of-way without written permission of the City Engineer is declared illegal; provided, that this Section shall not apply to mailboxes and attached newspaper boxes, placed on the City right-of-way, where these are placed as far removed from the driving portion of the right-of-way as possible, except that said placement shall be subject to approval of the City Engineer.

B. Any person placing any object or doing any work within a City right-of-way in violation of this Section shall be responsible for the removal of the object and repair of the right-of-way to the satisfaction of the Engineering Manager within forty-eight hours of receipt of written notice from the City. If the object is not removed or work repaired within forty-eight hours and it unreasonably hampers or prevents the proper use of the right-of-way, it may be summarily removed by the City at the cost of the person(s) placing the object or working in the right-of-way; provided that the notice requirement may be waived and the object may be immediately removed by The City if it presents an immediate threat of physical harm to persons or property.

C. Abatement of any object or encroachment in The City right-of-way which does not interfere with the proper and legitimate use of such right-of-way may be effected through an injunctive suit by City authorities.

D. The cost of the permit shall be as set forth in the City's fee schedule Resolution.

12.09.020 Violation - Penalty.

Any person who violates the provisions of Section 12.09.010 of this Chapter shall be guilty of a misdemeanor.

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Chapter 12.12

REFUSE ON RIGHT-OF-WAY

Sections:

12.12.010 Vehicles - Escape of Load.
12.12.020 Unlawful to Deposit Material on Right-of-Way.
12.12.030 Identification of Owner - Evidence of Dumping Material.
12.12.012 Violation - Penalty.

12.12.010 Vehicles - Escape of Load.

No vehicle shall be driven or moved on an public highway of The City unless such vehicle is so constructed or loaded as to prevent any of its load from dropping, sifting, leaking or otherwise escaping therefrom, except that sand may be dropped for the purpose of securing traction, or water may be sprayed on streetways in the cleaning and maintaining of such streetways by public authority having such jurisdiction. Any person operating a vehicle from which any objects have fallen or escaped shall immediately cause the highway to be cleaned of all such objects.

12.12.020 Unlawful to Deposit Material on Right-of-Way.

It is unlawful for any person to deposit or allow to be deposited any material upon any public right-of-way of The City or upon private or public property adjoining the highway on either side of the right-of-way, except at duly designated dumping places as set out and so marked and authorized by the City Council or otherwise permitted by the owners of adjoining private property or by constituted public authority. Any person violating this Section shall be responsible for the removal of the material within twenty-four hours of the receipt of written notice from The City. If the materials are not removed within twenty-four hours, the violator shall be responsible for all costs incurred by The City in removing the materials.

12.12.030 Identification of Owner - Evidence of Dumping Material.

Identification of the owner and location of any material of any nature found upon private or public property adjoining or on any public highway of this City shall be considered as prima facie evidence of its having been illegally deposited upon the public or private property or public highway by the identified owner of the material, as designated in Section 12.12.020.

12.12.012 Violation - Penalty.

Any violation of the provisions of this Chapter shall constitute a misdemeanor.

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APPENDIX 1

Recording Number _____

DECLARATION OF COVENANT AND IRREVOCABLE POWER OF ATTORNEY
(CORPORATE FORM)

This Dedication of Covenant and Irrevocable Power of Attorney is executed this __ day of _____, 19__ by _____, hereinafter referred to as Owners;

WHEREAS, Owners represent and warrant that they own and/or are legally entitled to encumber the real property described in Exhibit "A" attached hereto and incorporated herein, and;

WHEREAS, the Owners have submitted a project to the City for approval and/or have applied to the City for a permit on the property described in Exhibit "A" which abuts a substandard City street or is vicinal thereto, which project or permit issuance will impact and derive special benefits from the improvement of the City street and;

WHEREAS, the City may in the future construct, reconstruct or improve _____to City standards including curbs, and gutters and sidewalks, driveways across sidewalks, paving the streets with asphalt concrete paving, installing a storm drain systems, traffic signals and channelization, retaining walls, landscaping, street illumination, acquisition of required rights-of-way and easements, and other related work necessary to make an improvement in accordance with applicable City standards, so as to benefit the above described property, through the formation of a Street Improvement District.

NOW, THEREFORE, this Declaration of Covenant Witnesseth: The Owners, their heirs, grantees and assigns, hereby agree to participate in, and/or not oppose or protest, the formation of a City Street Improvement District (R.I.D.) pursuant to RCW 36.88 which is designed to improve the real property described in Exhibit "A" or the City street system of which it is a part.

Timing of the formation of said R.I.D. shall be determined by the City consistent with RCW 36.88. Improvements authorized by the R.I.D. shall call for the improvement of the street to the standards required in the City's Subdivision Regulations, as now enacted or hereafter amended. This covenant shall run with the land described in Exhibit "A" attached hereto and incorporated herein and be binding on all successors and assignees of the owners for a period not to exceed ten (10) years from the date hereof.

If any litigation is initiated to oppose a City R.I.D. by owners bound by the covenant, their successors or assigns, or to oppose any term or condition of this covenant, said owners, their successors or assigns agree to pay the City's cost of litigation including reasonable attorney's fees and administrative costs in the event the City prevails and/or the City R.I.D. is formed.

The owners hereby appoint the City Engineer as their attorney-in-fact to sign any petition for formation of a City R.I.D. which includes owners' property or to waive the right to protest the formation of a City R.I.D.

Nothing in this agreement shall be construed to waive the property owners' right to challenge the estimated costs of improvement to be financed by the district, to object to the assessment roll (including the determination of special benefits allocable to the property and or property assessment), or to appeal to superior court the decision of the City Council affirming the final assessment roll.

IN WITNESS WHEREOF, said corporation has caused this instrument to be executed by its proper officers this __ day of _____, 19__.

By _____

By _____

(STATE OF WASHINGTON)
(County of Pierce)

On this __ day of _____, 19__, before me personally appeared _____ _____ to me known to be the _____ and _____ of the corporation that executed the within and foregoing instrument, and acknowledged said instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that ___ _ authorized to execute said instrument.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.

_____
Notary Public in and for the State of Washington, Residing at _____

APPROVED as to form only:

_____
City Attorney

Accepted By:

_____
City Manager

APPENDIX 2

Recording Number _____

DECLARATION OF COVENANT AND IRREVOCABLE POWER OF ATTORNEY
(PARTNERSHIP FORM)

This Dedication of Covenant and Irrevocable Power of Attorney is executed this __ day of _____, 19__ by _____, a general partnership referred to as Owners;

WHEREAS, Owners represent and warrant that they own and/or are legally entitled to encumber the real property described in Exhibit "A" attached hereto and incorporated herein, and;

WHEREAS, the Owners have submitted a project to the City for approval and/or have applied to the City for a permit on the property described in Exhibit "A" which abuts a substandard City street or is vicinal thereto, which project or permit issuance will impact and derive special benefits from the improvement of the City street and;

WHEREAS, the City may in the future construct, reconstruct or improve _____ to City standards including curbs, and gutters and sidewalks, driveways across sidewalks, paving the streets with asphalt concrete paving, installing a storm drain systems, traffic signals and channelization, retaining walls, landscaping, street illumination, acquisition of required rights-of-way and easement, and other related work necessary to make an improvement in accordance with applicable City standards, so as to benefit the above described property, through the formation of a Street Improvement District.

NOW, THEREFORE, this Declaration of Covenant Witnesseth: The Owners, their heirs, grantees and assigns, hereby agree to participate in, and/or not oppose or protest, the formation of a City Street Improvement District (R.I.D.) pursuant to RCW 36.88 which is designed to improve the real property described in Exhibit "A" or the City street system of which it is a part.

Timing of the formation of said R.I.D. shall be determined by the City consistent with RCW 36.88. Improvements authorized by the R.I.D. shall call for the improvement of the street to the standards required in the City Streets Standards, as now enacted or hereafter amended. This covenant shall run with the land described in Exhibit "A" attached hereto and incorporated herein and be binding on all successors and assignees of the owners for a period not to exceed ten (10) years from the date hereof.

If any litigation is initiated to oppose a City R.I.D. by owners bound by the covenant, their successors or assigns, or to oppose any term or condition of this covenant, said owners, their successors or assigns agree to pay the City's cost of litigation including reasonable attorney's fees and administrative costs in the event the City prevails and/or the City R.I.D. is formed.

The owners hereby appoint the City Engineer as their attorney-in-fact to sign any petition for formation of a City R.I.D. which includes owners' property or to waive the right to protest the formation of a City R.I.D.

Nothing in this agreement shall be construed to waive the property owners' right to challenge the estimated costs of improvement to be financed by the district, to object to the assessment roll (including the determination of special benefits allocable to the property and or property assessment), or to appeal to superior court the decision of the City Council affirming the final assessment roll.

IN WITNESS WHEREOF, said corporation has caused this instrument to be executed by its proper officers this ___ day of _____, 19__.

By _____

By _____

(STATE OF WASHINGTON)
(County of Pierce)

On this personally appeared before me _____ and _____ to me known to be the individual(s) described in and who executed the within and foregoing instrument, and acknowledged that they signed the same as their free and voluntary act and deed, for the uses and purposes therein mentioned.

GIVEN under my hand and official seal this ___ day of _____, 19__.

_____
Notary Public in and for the State of Washington, Residing at _____

APPROVED as to form only:

_____
City Attorney

Accepted By:

_____
City Manager

APPENDIX 3

Recording Number _____

DECLARATION OF COVENANT AND IRREVOCABLE POWER OF ATTORNEY
(INDIVIDUAL FORM)

This Dedication of Covenant and Irrevocable Power of Attorney is executed this __ day of _____, 19__ by _____, hereinafter referred to as Owners;

WHEREAS, Owners represent and warrant that they own and/or are legally entitled to encumber the real property described in Exhibit "A" attached hereto and incorporated herein, and;

WHEREAS, the Owners have submitted a project to the City for approval and/or have applied to the City for a permit on the property described in Exhibit "A" which abuts a substandard City street or is vicinal thereto, which project or permit issuance will impact and derive special benefits from the improvement of the City street and;

WHEREAS, the City may in the future construct, reconstruct or improve _____ to City standards including curbs, and gutters and sidewalks, driveways across sidewalks, paving the streets with asphalt concrete paving, installing a storm drain systems, traffic signals and channelization, retaining walls, landscaping, street illumination, acquisition of required rights-of-way and easements, and other related work necessary to make an improvement in accordance with applicable City standards, so as to benefit the above described property, through the formation of a Street Improvement District.

NOW, THEREFORE, this Declaration of Covenant Witnesseth: The Owners, their heirs, grantees and assigns, hereby agree to participate in, and/or not oppose or protest, the formation of a City Street Improvement District (R.I.D.) pursuant to RCW 36.88 which is designed to improve the real property described in Exhibit "A" or the City street system of which it is a part.

Timing of the formation of said R.I.D. shall be determined by the City consistent with RCW 36.88. Improvements authorized by the R.I.D. shall call for the improvement of the street to the standards required in the City Streets Standards, as now enacted or hereafter amended. This covenant shall run with the land described in Exhibit "A" attached hereto and incorporated herein and be binding on all successors and assignees of the owners for a period not to exceed ten (10) years from the date hereof.

If any litigation is initiated to oppose a City R.I.D. by owners bound by the covenant, their successors or assigns, or to oppose any term or condition of this covenant, said owners, their successors or assigns agree to pay the City's cost of litigation including reasonable attorney's fees and administrative costs in the event the City prevails and/or the City R.I.D. is formed.

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APPENDIX 4

STREET MAINTENANCE COVENANT

THIS COVENANT is recorded in connection with the division of the property described below and the creation of the streetway to serve the parcels described. The purpose of this covenant shall be to provide adequate funds for the repair and maintenance of the street described below for the continued use and benefit of the owners thereof. This Covenant touches and concerns the land and shall run with the land for as long as the streetway described below is used to serve one or more of the lots described below.

1. Owners.

The term "owner" shall mean any person holding beneficiary interest in a lot described in paragraph 2 below or any subdivision thereof whether by deed, real estate contract or other instrument evidencing the ownership of the lot.

2. Responsibility of Owners.

The owners of each lot or subdivision thereof shall designate a "Responsible Owner" and an assistant for purposes of administering this Covenant. The affirmative vote of 50 percent of the owners of the lots described herein, or any subdivision thereof, shall be sufficient to designate the responsible owner and assistant. Until such time as 50% of the lots in the subdivision are sold, the original subdivision owner(s) shall be the responsible owner, after which time the original owner may call a meeting of the lot owners for the purpose of explaining the duties of the "responsible owner" and "assistant," choosing a new "responsible owner" and "assistant" and giving to them monies collected to date together with any bank accounts and bank statements related to this matter.

The "responsible owner" and "assistant" shall serve for a minimum of one year, after which they may call all lot owners together and designate a new "responsible owner" and/or "assistant" and assign maintenance duties, monies and statements over to them at that time.

3. Property served by the Street and subject to the Terms of this Covenant.

(INSERT LEGAL DESCRIPTION OF PROPERTY)

The term "lots" shall also include each new lot which may be created by the further division of property described above.

4. Streetway to be covered by this Agreement.

(INSERT LEGAL DESCRIPTION OF STREETWAY TO BE MAINTAINED PURSUANT TO THIS COVENANT)

5. Standards of Maintenance.

The streetway shall be maintained in a safe condition consistent with City standards for private streets. The "Full" or "Entire" surface of the streetway shall be maintained so as to allow free and reasonable passage of such vehicular traffic as may be reasonable and necessary in order that all parties may enjoy full and free use of the parcels of real property affected hereby. Where any question exists as to the standards to be applied, the owners may obtain a recommendation from a licensed professional engineer whose written recommendations may be followed in lieu of the standards identified above.

6. Funds.

A. Normal Expenses.

i. Undeveloped Lots.

The owner of each lot not developed by a permanent structure shall pay the sum of $_____ per ___ year/___ _ quarter/___ month (check one) to cover the pro rata share of normal street maintenance expenses.

ii. Developed Lots.

The owner of each lot developed with any permanent structure shall pay the sum of $_____ per ___ _ year/___ quarter/___ month (check one) to cover the pro rata share of normal street maintenance expenses.

B. Extraordinary Use.
Any lot being used for other than single-family residential purposes shall be assessed an additional fee, to be paid at the same time as the fee described in paragraph 6.A.ii. above, which shall compensate for the additional wear and tear due to the extraordinary use. If agreement cannot be reached on the appropriate additional charge, the responsible owner may obtain the opinion of a licensed professional engineer to ascertain the amount of the extra assessment, which opinion shall be binding on all parties.

C. Extraordinary Repairs.
The responsible owner may, at any time, assess additional charges for emergency repairs or extraordinary repairs where approval of such charges is made in writing by the owners of not less than ___ 50%/ ___ 66-2/3%/ ___ 75%/other ___% (check one) of the lots described in paragraph 3.

7. Collections and Expenditures.
The responsible owner shall have the authority to collect funds as provided herein and to contract for purposes of accomplishing the provisions of this Covenant. In so acting, said owner shall be acting on behalf of all owners for the limited purposes described herein.

8. Changes.
The owners shall annually review the charges set forth herein and may change the charges specified herein. An affirmative vote of 60 percent of the property owners of the lots described herein shall be sufficient to effect a change in the rates. Any other changes to this Covenant shall be approved in writing and signed by the owners of record of ___ 66 percent/___ 75 percent (check one) of the owners of the lots described herein.

9. Removal or Additions.

A. Removal.
Any lot may be removed from the requirements of this Covenant by recording a declaration that said lot shall not gain any access by reason of the above-described streetway, but not otherwise.

B. Additions.

Property in addition to that described in paragraph 3 and streets in addition to that described in paragraph 4 may be added to this convent by the affirmative action, in writing of ___ 66-2/3 percent/ ___ 75 percent (check one) of the owners of record of the lots described in paragraph 3.

10. Administration.
The responsible owner shall be authorized to open and maintain bank accounts and engage the services of licensed professionals to assist in the administration of this Covenant. In the event funds are not paid when due, said owner may maintain an action to collect the funds and shall be entitled to costs and a reasonable attorney's fee upon recovery. All costs incurred by the owner shall be charged to the account described above.

11. Continuing Obligation.
The Covenants herein are necessary for the full use and enjoyment of the property described herein and shall be binding upon all owners, their heirs, successors or assigns. In the event any property changes hands, the new owner shall be responsible for all past due charges outstanding against the lot at the time of transfer.

SIGNED THIS ___ day of _____, 1988. _____
(To be signed by all owners of record of property described in paragraph 3.)

(STATE OF WASHINGTON)
(County of Pierce)

On this day personally appeared before me _____, to me known to be the individual described in and who executed the within and foregoing instrument, and acknowledged that _____ signed the same as _____ free and voluntary act and deed, for the uses and purposes therein mentioned.

GIVEN under my hand and official seal this _____ day of _____, 1988.

_____

NOTARY PUBLIC in and for the State of Washington, residing at _____.
My Commission Expires:

CHART 1

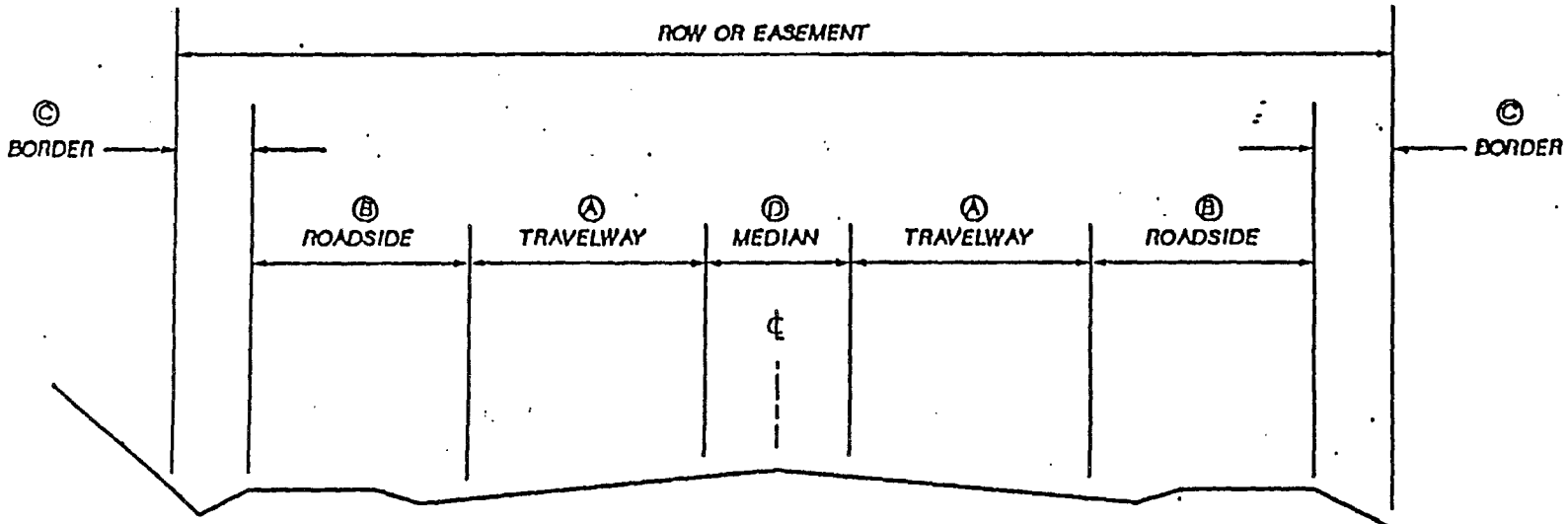
DESIGN CRITERIA

Design Speed	Minimum Horizontal Curve	Stopping Sight Distance *	Entering Sight Distance**	Maximum Grade
< 25mph	260 ft	150 ft	160 ft	15%
25mph	350 ft	150 ft	160 ft	15%
30mph	350 ft with no superelevation	200 ft	260 ft	15%
35mph	As determined by engineer.	225 ft	260 ft	15%
40mph	As determined by engineer.	275 ft	310 ft	15%
45mph	As determined by engineer	325 ft	360 ft	15%
50mph	As determined by engineer	400 ft	415 ft	15%

* Based on an object height of .5 ft, and a drivers eye height of 3.5 ft.

** Based on an entering vehicle eye height of 3.5 ft, and an approaching vehicle height of 4.25 ft. The sight distance is measured from a point in the driveway 10 ft back from the edge of the traveled way.

TABLE __.03-A



Ⓐ TRAVELWAY

- THROUGH LANES
- TWO WAY LEFT TURN LANE
- LEFT TURN LANE
- RIGHT TURN LANE
- CHANNELIZATION
- PAVEMENT MARKINGS

Ⓑ ROADSIDE

- SHOULDER
- BIKEWAY
- ENCLOSED DRAINAGE
- CURB AND GUTTER
- SIDEWALK
- BUFFER
- PEDESTRIAN PATH
- TRANSIT FACILITIES

© BORDER

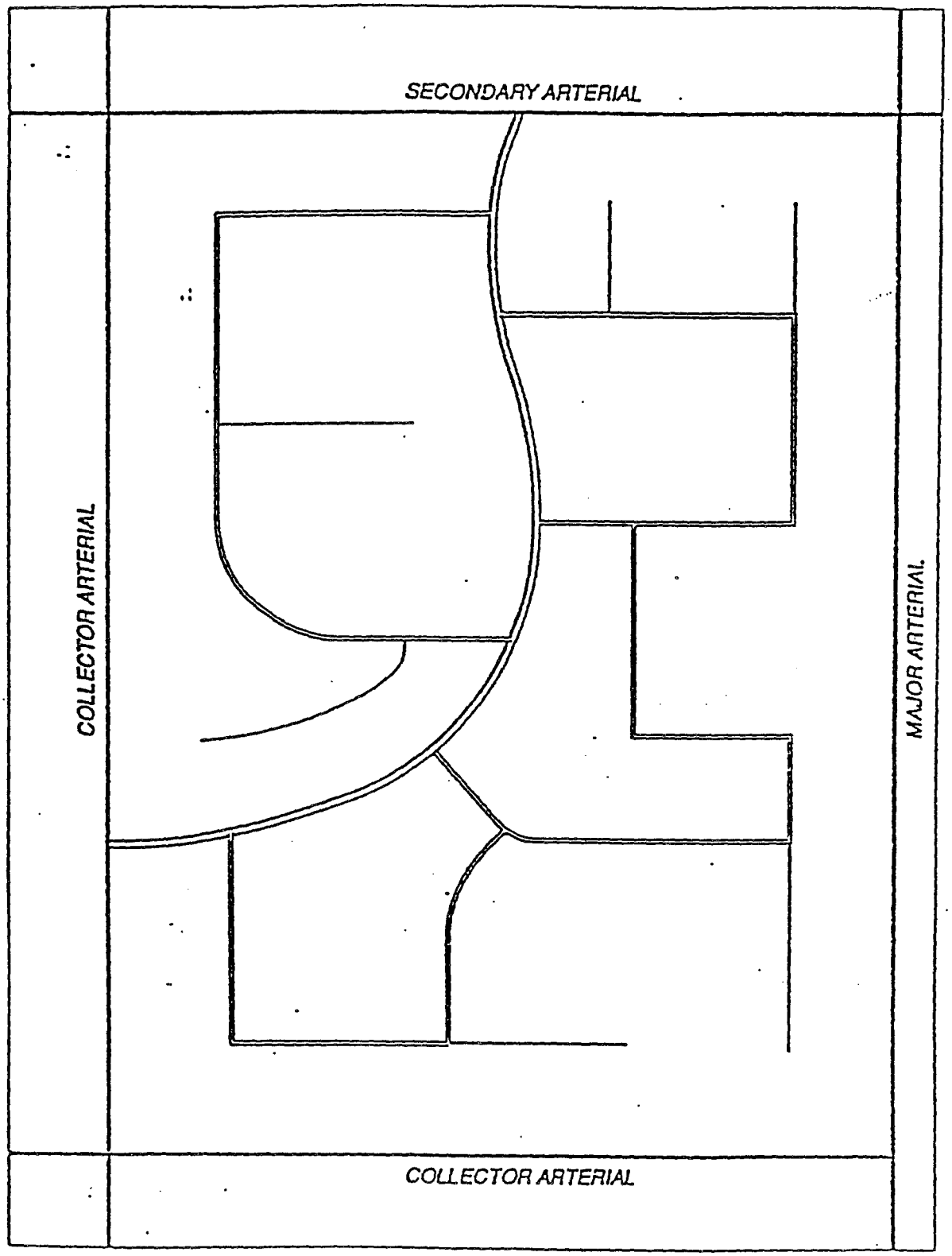
- CUT-FILL SLOPES
- RETAINING WALLS
- OPEN DRAINAGE
- UTILITY EASEMENTS
- LANDSCAPE EASEMENTS
- GUARDRAIL
- MAILBOXES

Ⓓ MEDIAN

- CURB AND GUTTER
- GROUND COVER

Figure 12.03-A
KEY TO GENERIC
CROSS SECTION

TABLE _.03-B



LEGEND

Local Road Feeder
Local Road Minor
Local Road Cul-de-Sac

Figure 12.03-B
EXAMPLE – CONCEPTUAL
LOCAL ROAD SYSTEM

Table 12.03-1
Principal Arterial Design Elements

Functional Classification	**Principal Arterial** Design speed equals 50 mph. Greater speeds may be required by the City based on the facility being proposed.
Access Control	No direct residential lot access. Driveways allowed to commercial, industrial, and public facilities. Driveways should be combined where practical. Driveway standards contained in the Access Control chapter and in the Site Development Regulations.
Design Elements	**Criteria/Application**
A. Travelway	
Through Lanes	11 feet minimum lane width for multilane facility, 12 feet for two-lane facility. Number of lanes is a function of traffic volume and level of service.
Two-Way Left-Turn Lane (TWLT)	12 feet minimum lane width. Application is a function of turning movement volume, existing driveway spacing and safety.
Left-Turn Lane	12 feet minimum lane width. Provided at intersections where volumes warrant lane.
Right-Turn Lane	12 feet minimum lane width. Provided at intersections where volumes warrant lane.
Channelization	Optional or required items such as painted or curbed islands and traffic separation when warranted.
Traffic Control	Center stripe required. Lane line and channelization striping required where applicable (refer to Standard Details). Pavement marking required where applicable. Signalization requires traffic volume warrants consistent with MUTCD. Refer to the City Traffic Engineer for traffic signal details.
B. Roadside	
Drainage	Closed drainage required if conditions in Section 12.03.060 B.12. are met. All other drainage can be open. Enclosed drainage required if conditions in Section 12.03.060 B.12. are met. This will be typical on all these charts.
Curb and Gutter	Use of curb and gutter required. Raised edge, curb and gutter is included in shoulder dimension when provided. Vertical face curb or curb and gutter required if sidewalks provided. Not required with open drainage.
Shoulder	6- foot minimum, 12-foot maximum. If required, raise edge, curb, or curb/gutter located at edge of travelway, where sidewalk shoulder width is reduced to zero feet.

Table 12.03-1
Principal Arterial Design Elements

Shared Use Bikeway	Required. 3 feet paved shoulder with open drainage, or 3 feet paved shoulder from edge of travelway to gutter line with closed drainage.
Sidewalk	Required. Six (6) feet with buffer, eight (8) feet without buffer when provided. Ten (10) feet at transit stops. Requires the uses of vertical face curb or curb/gutter.
Buffer	Optional 4 feet minimum, 8 feet maximum from face of curb where sidewalks are provided. Maintenance agreement required. Required where pedestrian and bicycle paths are provided.
Pedestrian Path	May be required along shoulder sections where sidewalks are not provided and a principal pedestrian generator is nearby such as a school or park. 6 feet minimum width. Located behind ditch section with open drainage, or behind shoulder with closed drainage.
Bicycle Path	Required. 8 feet minimum width. 10 feet minimum width when combined with pedestrian path. Located same as Pedestrian Path.
Transit Facilities	Requires 10-foot sidewalk where facilities required.
C. Border	
Cut-Fill	Requires soils analysis. Function of safety and geometric requirements. Refer to specifications, Section 12.03.060 B.30.
Retaining Walls	Required when stabilization is necessary and ROW limits length of cut or fill.
Ditch	Must meet minimum cut-fill requirements. Flow line minimum is 4 feet 6 inches from back of shoulder at 3:1 cut slope.
D. Median	
	Allowed in City ROW with the approval of the Public Works Director. Eight feet wide minimum, sixteen wide maximum. Minimum length of 200 feet. Use of vertical curbs and gutter only. Landscaping subject to Public Works Director approval.
E. Right-of-Way	
Width	80 feet minimum. Additional required to provide for existing and future design elements.

Table 12.03-3
Secondary Arterial Design Elements

Functional Classification	**Secondary Arterial** Design speed equals 45 mph. Greater speeds may be required by the 'City' based on the facility being proposed.
Access Control	No direct residential lot access. Driveways allowed to commercial, industrial, and public facilities. Driveways should be combined where practical. Driveway standards contained in the Access Control chapter and in the Site Development Regulations.
Design Elements	**Criteria/Application**
A. Travelway	
Through Lanes	11 feet minimum lane width for multilane facility, 12 feet for two-lane facility. Number of lanes is a function of traffic volume and level of service.
Two-Way Left-Turn Lane (TWLT)	12 feet lane width desirable. Application is a function of turning movement volume, existing driveway spacing, and safety.
Left-Turn Lane	12 feet minimum lane width. Provided at intersections where volumes warrant lane.
Right-Turn Lane	12 feet minimum lane width. Provided at intersections where volumes warrant lane.
Channelization	Optional or required items such as painted or curbed islands and traffic separation medians.
Traffic Control	Center stripe required. Lane line and channelization striping required where applicable (refer to 7. Standard Details). Pavement marking required where applicable. Signalization requires traffic volume warrants consistent with MUTCD Refer to City Traffic Engineer for traffic signal details.
B. Roadside	
Drainage	Closed drainage required if conditions in section 12.03.060B.12 are met. All other drainage can be open.

Table __.03-3
Secondary Arterial Design Elements

Curb and Gutter	Use of curb and gutter required. Raised edge, curb and gutter is included in shoulder dimension when provided. Vertical face curb or curb and gutter required if sidewalks provided. Not required with open drainage.
Shared Use Bikeway	Required. 3 feet paved shoulder with open drainage, or 3 feet paved shoulder from edge of travelway to gutter line with closed drainage.
Shoulder	6-foot minimum, 12-foot maximum. If required, raised edge, curb, or curb and gutter located at edge of travelway. Where sidwalk provided, the shoulder width is reduced to zero feet.
Sidewalk	Required. Five (5) feet with buffer, six (6) feet without buffer when provided. Ten (10) feet at transit stops. Requires the uses of vertical face curb or curb/gutter.
Buffer	Optional 4 feet minimum, 8 feet maximum from face of curb where sidewalks are provided. Maintenance agreements required.
Pedestrian Path	May be required along shoulder sections where sidewalks are not provided and a major pedestrian generator is near by such as a school or park. 6 feet minimum width. Located behind ditch section with open drainage, or behind shoulder with closed drainage.
Bicycle Path	Optional unless required by the Pierce County Transportation Plan or other City requirement. 8 feet minimum width. 10 feet minimum width when combined with pedestrian path. Located same as Pedestrian Path.
Transit Facilities	Requires 10-foot sidewalk where transit facilities allowed.

Table ___.03-3 Secondary Arterial Design Elements 	
C. Border.	
Cut-Fill	Requires soils analysis. Function of safety and geometric requirements. Refer to specifications, Section 12.03.060.B.30.
Retaining Walls	Required when stabilization is necessary and ROW limits length of cut or fill.
Ditch	Must meet minimum cut-fill requirements. Flow line minimum is 4 feet 6 inches from back of shoulder at 3:1 cut slope.
D. Median	
	Not allowed as county ROW. 8 feet minimum, 16 feet maximum. Minimum length equals 200 feet. Use vertical curbs and gutter only. May be landscaped with ground cover subject to City approval.
E. Right-of-Way	
Width	70 feet minimum. Additional required to provide for existing and future design elements.
Easement	Allowed only for public utilities. Private secondary arterials not allowed.

Table __.03-4
Geometric Design Criteria for Secondary Arterials

	Design Speed (mph)				
Criteria	55	50	45	40	35
Horizontal Curvature[1]					
D Max (degrees)	4.8	6.2	7.8	9.1	13.6
R Min (feet)	1,186	926	730	628	419
Maximum Superelevation (%)	4	4	4	4	4
Grade					
Max (%)	10	10	10	10	10
Min (%) (longitudinal)	0.7	0.7	0.7	0.7	0.7
Min (%) (cross section)	2	2	2	2	2
Stopping Sight Distance[2] (feet)	550	475	400	325	250
	Entering Sight Distance				
Posted Speed (mph)	45	40	35	30	25
Distance[3] (feet)	530	470	415	344	295

[1]Table values based on maximum superelevation. Actual D max and R min is a function of the superelevation, maximum side friction, and design speed.

[2]Based on an object height of 0.5 foot and a driver's eye height of 3.5 feet.

[3]Entering sight distance shall apply to all intersections and driveways unless otherwise approved by the City.

Requires variance approval.

Table __.03-5
Collector Arterial Design Standards

Functional Classification	Collector Arterial Design speed equals 40 mph. Greater speeds may be required by the City based on the facility being proposed.
Access Control	No direct residential lot access. Driveways allowed to commercial, industrial, and public facilities. Commercial driveways should be combined where practical. Driveway standards contained in the Access Control chapter and in the Site Development Regulations.
Design Elements	**Criteria/Application**
A. Travelway	
Through Lanes	11 feet minimum lane width for multilane facility, 12 feet for two-lane facility. Number of lanes is a function of traffic volume and level of service.
Two-Way Left Turn Lane (TWLT)	12 feet lane width desirable. Application is a function of turning movement volume, existing driveway spacing, and safety.
Left-Turn Lane	12 feet minimum lane width. Provided at intersections where volumes warrant lane.
Right-Turn Lane	12 feet minimum lane width. Provided at intersections where volumes warrant lane.
Channelization	Required items such as painted or curbed islands and traffic separation.
Traffic Control	Center stripe required (refer to Standard Details). Signalization requires traffic volume warrants consistent with MUTCD. Refer to City Traffic Engineer for traffic signal details.
B. Roadside Development	
Drainage	Closed drainage required if conditions in Section 12.03.060.B.12 are met. All other drainage can be open.
Curb and Gutter	Use of curb and gutter required. Raised edge, curb and gutter is included in shoulder dimension when provided. Vertical face curb or curb and gutter required if sidewalks provided. Not required with open drainage.

Table __.03-5
Collector Arterial Design Standards

Shoulder	6-foot minimum, 12-foot maximum. If required, raised edge, curb, or curb and gutter located at edge of travelway. Where sidewalk provided, the shoulder width is reduced to zero feet.
Shared Use Bikeway	Required. 3 feet paved shoulder with open drainage, or 3 feet paved shoulder from edge of travelway to gutter line with closed drainage.
Sidewalk	Required. Five (5) feet with buffer, six (6) feet without buffer when provided. Ten (10) feet at transit stops. Requires the uses of vertical face curb or curb/gutter.
Buffer	Optional 4 feet minimum, 8 feet maximum from face of curb where sidewalks are provided. Maintenance agreements required.
Pedestrian Path	May be required along shoulder sections where sidewalks are not provided and a pedestrian generator is near by such as a school or park. 6 feet minimum width. Located behind ditch section with open drainage, or behind shoulder with closed drainage.
Bicycle Path	Optional unless required by the Pierce County Transportation Plan or other City requirements. 8 feet minimum width. 10 feet minimum when combined with pedestrian path. Location same as Pedestrian Path.
Transit Facilities	Requires 10-foot sidewalk where transit facilities allowed.

Table __.03-5
Collector Arterial Design Standards

C. Border	
Cut-Fill	Requires soils analysis. Function of safety and geometric requirements. Refer to specifications, Section 12.03.060.B.30.
Retaining Walls	Required when stabilization is required and ROW limits length of cut or fill.
Ditch	Must meet minimum cut-fill requirements. Flow line minimum is 4 feet 6 inches from back of shoulder at 3:1 cut slope.
D. Median	
	Not allowed as county ROW. 8 feet minimum, 16 feet maximum. Minimum length equals 200 feet. Use vertical curb and gutter only. May be landscaped with ground cover subject to City approval.
E. Right-of-Way	
Width	60 feet minimum. As required to provide for existing and future design elements.
Easement	Allowed only for public utilities. Private collector arterials not usually allowed.

Table 03-6
Geometric Design Criteria for Collector Arterials

	Design Speed (mph)				
Criteria	45	45	35	35	30
Horizontal Curvature[1]					
D Max (degrees)	6.2	7.8	9.1	13.6	19.0
R Min (feet)	926	730	628	419	300
Maximum Superelevation (%)	4	4	4	4	4
Grade					
Max (%)	12	12	12	12	12
Min (%) (longitudinal)	0.7	0.7	0.7	0.7	0.7
Min (%) (cross section)	2	2	2	2	2
Stopping Sight Distance[2] (feet)	475	400	325	250	200
	Entering Sight Distance				
Posted Speed (mph)	35	35	25	25	25
Distance[3] (feet)	470	415	355	295	295

[1]Table values based on maximum superelevation. Actual D max and R min is a function of the superelevation, maximum side friction, and design speed.
[2]Based on an object height of 0.5 foot and a driver's eye height of 3.5 feet.
[3]Entering sight distance shall apply to all intersections and driveways unless otherwise approved by the City.
Requires variance approval.

Table __.03-7
Local Road Feeder Design Elements

Functional Classification	**Local Road Feeder** **Design speed equals 35 mph.**
Access Control	No direct residential lot access. Commercial driveways should be combined where practical. Driveway standards contained in the Access Control chapter and in the Site Development Regulations.
Design Elements	**Criteria and Application**
A. Travelway	
Through Lanes	Only two lanes allowed. 12 feet minimum lane width.
Two-Way Left-Turn Lane (TWLT)	Not allowed.
Left-Turn Lane	12 feet minimum lane width. Allowed at an intersection with an arterial where left turns warrant the lane.
Right-Turn Lane	Allowed at an intersection with an arterial where left turns warrant the lane.
Channelization	Not allowed.
Traffic Control	No pavement marking allowed. "T" intersections desirable. Signalization required when traffic volume warrants, consistent with MUTCD. Refer to Pierce County Traffic Engineer for traffic signal details.
Cul-de-sac	Not allowed.
B. Roadside	
Drainage	Closed drainage required if conditions in Section 12.03.060.B.12 are met. All other drainage can be open.
Curb and Gutter	Not required with open drainage. Raised edge required with closed drainage. Optional use of curb or curb and gutter allowed. Raised edge, curb, and gutter is included in shoulder dimension when provided. Vertical face curb or curb and gutter required if sidewalks provided.

Table ___.03-7
Local Road Feeder Design Elements

Shoulder	6-foot minimum, 12-foot maximum. Gravel shoulder required with open drainage or raised edge. Additional 6-foot paved shoulder required between edge of travelway and edge of curb or curb/gutter when sidewalk or rolled curb provided.
Shared Use Bikeway	Optional unless required by the Pierce County Transportation Plan or other County requirement. 3 feet paved shoulder with open drainage. 3 feet paved shoulder from edge of travelway to gutter line with closed drainage.
Sidewalk	Optional unless required by the Pierce County Transportation Plan or other County requirements. 5 feet minimum. When provided, requires use of vertical face curb or curb/gutter. 10 feet required at transit stops.
Buffer	Optional 4 feet minimum, 6 feet maximum from face of curb where sidewalks are provided. Maintenance agreements required.
Pedestrian Path	May be required along shoulder sections where sidewalks are not provided and a major pedestrian generator is near by such as a school or park. 6 feet minimum width. Located behind ditch section with open drainage or behind shoulder with closed drainage.
Bicycle Path	Optional unless required by the Pierce County Transportation Plan or other County requirement. 8 feet minimum width. 10 feet minimum when combined with pedestrian path. Located same as Pedestrian Path.
Transit Facilities	Requires 10-foot sidewalk where transit facilities allowed.
C. Border	
Cut-Fill	Requires soils analysis. Function of safety and geometric requirements. Refer to specifications, Section 12.03.060.B.12.
Retaining Walls	Required when stabilization is required and ROW limits length of cut or fill.
Ditch	Must meet minimum cut-fill requirements. Flow line minimum 4'-6" from back of shoulder at 3:1 cut slope.

Table ___.03-1
Local Road Feeder Design Elements

D. Median	
	Not allowed as county ROW. 8 feet minimum, 16 feet maximum. Minimum length equals 200 feet. Use vertical curb and gutter only. May be landscaped with ground cover subject to County approval.
E. Right-of-Way	
Width	50 feet minimum with underground utilities. 60 feet minimum with surface utilities. Additional required to provide for existing and future design elements.
Easement	Allowed beyond roadside for underground public utilities. Private roads allowed when design standards are met.

Table __.03-8
Geometric Design Criteria for Local Road Feeder

	Design Speed (mph)			
Criteria	40	35	30	25
Horizontal Curvature[1]				
D Max (degrees)	9.1	12.2	17.1	25.4
R Min (feet)	628	467	333	225
Maximum Superelevation (%)	12	2	2	2
Grade				
Max (%)	12	12	12	12
Min (%) (longitudinal)	0.7	0.7	0.7	0.7
Min (%) (cross section)	2	2	2	2
Stopping Sight Distance[2] (feet)	325	250	200	150
	Entering Sight Distance			
Posted Speed (mph)	30	25	25	25
Distance[3] (feet)	335	295	295	295

[1]Table values based on maximum superelevation. Actual D max and R min is a function of the superelevation, maximum side friction, and design speed. 350 feet minimum radius with no superelevation. Source: AASHTO

[2]Based on an object height of 0.5 foot and a driver's eye height of 3.5 feet. Source: AASHTO, 1990.

[3]Entering sight distance shall apply to all intersections and driveways unless otherwise approved by the City.

▒ Requires variance approval.

Table __.03-9
Local Road Minor Design Elements

Functional Classification	**Local Road Minor** Design speed equals 30 mph.
Access Control	Direct lot access allowed. Driveways spacing contained the Access Control chapter and in the Site Development Regulations.
Design Elements	**Criteria/Application**
A. Travelway	
Through Lanes	Only two lanes allowed. 12 feet minimum lane width. 11 feet allowed for less than 800 ADT.
Two-Way Left-Turn Lane (TWLT)	Not allowed.
Left-Turn Lane	Not allowed.
Right-Turn Lane	Not allowed.
Channelization	Not allowed.
Traffic Control	No pavement markings allowed. "T" and "L" intersections desirable.
Cul-de-Sac	Not allowed. Temporary dead-end allowed with county approval.
B. Roadside	
Drainage	Closed drainage required if conditions in Section 12.03.060B.12 are met. All other drainage can be open.
Curb and Gutter	Not required with open drainage. Raised edge required with closed drainage. Optional use of curb, or curb and gutter allowed. Raised edge, curb, and gutter is included in shoulder dimension when provided. Vertical face curb or curb and gutter required if sidewalks provided.
Shoulder	6-foot minimum, 12-foot maximum. Gravel shoulder required with open drainage or raised edge. Additional 6-foot paved shoulder required between edge of travelway and edge of curb or curb/gutter when sidewalk or rolled curb provided.

Table __.03-9
Local Road Minor Design Elements

Shared Use Bikeway	Optional unless required by the Pierce County Transportation Plan or other County requirement. 3 feet paved shoulder with open drainage. 3 feet paved shoulder from edge of travelway to gutter line with closed drainage.
Sidewalk	Optional unless required by the Pierce County Transportation Plan or other County requirements. 5 feet minimum. When provided, requires use of vertical face curb or curb gutter.
Buffer	Optional 4 feet minimum, 6 feet maximum from face of curb where sidewalks are provided. Maintenance agreements required.
Pedestrian Path	May be required along shoulder sections where sidewalks are not provided and a major pedestrian generator is near by such as a school or park. 6 feet minimum width. Located behind ditch section in open drainage or behind shoulder with closed drainage.
Bicycle Path	Optional unless required by the Pierce County Transportation Plan or other County requirements. 8 feet minimum width. 10 feet minimum width when combined with pedestrian path. Location same as Pedestrian Path.
Transit Facilities	Not allowed.
C. Border	
Cut-Fill	Requires soils analysis. Function of safety and geometric requirements. Refer to specifications, Section 12.03.060.B.30.
Retaining Walls	Required when stabilization is required and ROW limits length of cut or fill.
Ditch	Must meet minimum cut-fill requirements. Flow line minimum 4'-6" from back of shoulder at 3:1 cut slope.
D. Median	
	Not allowed.

Table __.03-9
Local Road Minor Design Elements

E. Right-of-Way	
Width	50 feet minimum with underground utilities. 60 feet minimum with above-ground utilities. Additional required to provide for existing and future design elements.
Easement	Allowed beyond roadside for underground public utilities. Private roads allowed when design standards are met.

Table __.03-10 Geometric Design Criteria for Local Road Minor			
	Design Speed (mph)		
Criteria	35	30	30
Horizontal Curvature[1] D Max (degrees) R Min (feet)	 9.4 599	 13.3 423	 19.9 281
Maximum Superelevation (%)	0	0	0
Grade Max (%) Min (%) (longitudinal) Min (%) (cross section)	 15 0.7 2	 15 0.7 2	 15 0.7 2
Stopping Sight Distance[2] (feet)	250	200	150
	Entering Sight Distance		
Posted Speed (mph)	25	25	25
Distance[3] (feet)	295	295	295

[1] Table values based on maximum crown slope. Actual D max and R min is a function of the superelevation, maximum side friction, and design speed. 260-foot minimum radius with no superelevation. Source: AASHTO.

[2] Based on an object height of 0.5 foot and a driver's eye height of 3.5 feet. Source: AASHTO, 1990.

[3] Entering sight distance shall apply to all intersections and driveways (except residential) unless otherwise approved by the City.

Requires variance approval.

Table 12.03-11 Local Road Cul-de-sac Design Elements	
Functional Classification	**Local Road Cul-de-sac** Design speed equals 25 mph.
Access Control	Direct lot access allowed. Less than 500 feet in total length. Driveways spacing contained in the Access Control chapter and in the Site Development Regulations.
Design Elements	**Criteria/Application**
A. Travelway	
Through Lanes	Only two lanes allowed. 11 feet minimum lane width.
Two-Way Left-Turn Lane (TWLT)	Not allowed.
Left-Turn Lane	Not allowed.
Right-Turn Lane	Not allowed.
Channelization	Not allowed.
Traffic Control	No pavement markings allowed. "T" and "L" intersections desirable.
Cul-de-sac	40 feet radius to edge of travelway.
B. Roadside	
Drainage	Closed drainage required if conditions in Section 12.03.060 B.12. are met. All other drainage can be open.
Curb and Gutter	Not required with open drainage. Raised edge required with closed drainage. Optional use of curb, curb and gutter, or rolled curb allowed. Raised edge, curb, and gutter is included in shoulder dimension when provided. Vertical face curb or curb and gutter required if sidewalks provided.
Shoulder	6-foot minimum, 12-foot maximum. Gravel shoulder required with open drainage or raised edge. Additional 5-foot paved shoulder required between edge of travelway and edge of curb or curb/gutter when sidewalk or rolled curb provided.
Shared Use Bikeway	Not allowed.

Table 12.03-11 Local Road Cul-de-sac Design Elements	
Sidewalk	Optional unless required by the City of Univesity Place Transportation Plan or other City requirement. 5 feet minimum. When provided, requires use of vertical face curb or curb/gutter.
Buffer	Optional. 4 feet minimum, 6 feet maximum from back of curb where sidewalks are provided. Maintenance agreements required.
Pedestrian Path	Not allowed.
Bicycle Path	Not allowed.
Transit Facilities	Not allowed.
C. Border	
Cut-Fill	Requires soils analysis. Function of safety and geometric requirements. Refer to specifications, Section 12.03.060 B.30.
Retaining Walls	Required when stabilization is required and ROW limits length of cut or fill.
Ditch	Must meet minimum cut-fill requirements. Flow line minimum 4¢-6² from back of shoulder at 3:1 cut slope.
D. Median	
	Not allowed.
E. Right-of-Way	
Width	50 feet minimum with underground utilities. 60 feet minimum with surface utilities. Additional required to provide for existing and future design elements.
Easement	Allowed beyond roadside for underground public utilities. Private roads allowed when design standards are met.

Table 12.03-12
Geometric Design Criteria for Local Road Cul-de-sacs

	Design Speed (mph)		
Criteria	35	30	25
Horizontal Curvature[1]			
D Max (degrees)	9.4	13.3	19.9
R Min (feet)	599	423	281
Maximum Superelevation (%)	0	0	0
Grade			
Max (%)	12	15	15
Min (%) (longitudinal)	0.7	0.7	0.7
Min (%) (cross section)	2	2	2
Stopping Sight Distance[2] (feet)	250	200	150
	Entering Sight Distance		
Posted Speed (mph)	25	25	25
Distance[3] (feet)	295	295	295

[1] Table values based on maximum crown slope. Actual D max and R min is a function of the superelevation, maximum side friction, and design speed. Source: AASHTO.

[2] Based on an object height of 0.5 foot and a driver's eye height of 3.5 feet. Source: AASHTO, 1990.

[3] Entering sight distance shall apply to all driveways (except residential) unless otherwise approved by the City.

Requires variance approval.

Table __.03-13
Roadway Intersection Design Standards

INTERSECTION SPACING

Distance between major arterials - 1 Mile ±

Distance from major arterials to secondary arterials - 1/2 Mile ±

Distance from major and secondary arterials to collector arterials - 1/4 Mile ±

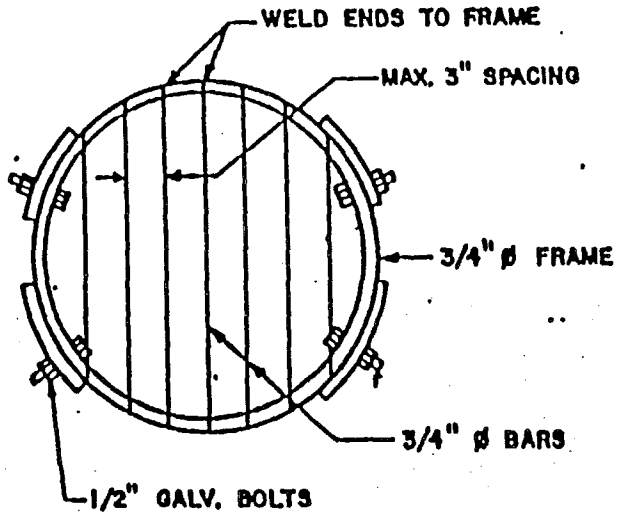
Spacing of intersections on arterials shall be 300 feet or more.

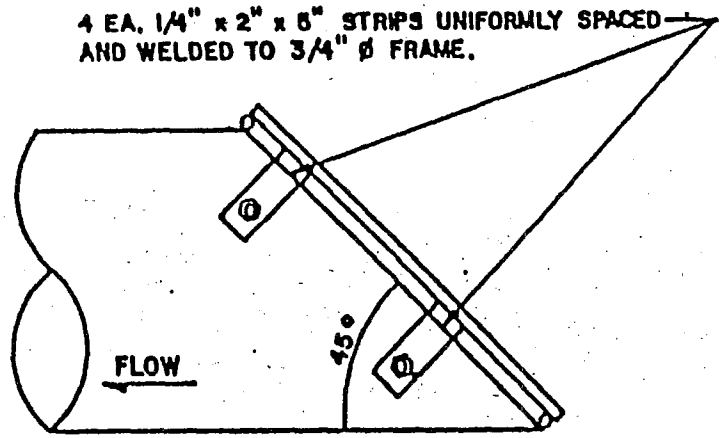
Spacing of intersections on local access roads shall be 150 feet or more.

The intent of spacing is to minimize the number of intersections on arterials local road feeders.

Minimum angle	90 degrees ±5 degrees
Minimum curb radius	30 feet
Minimum property line radius	20 feet
Maximum Landing Grade	Not to exceed 1 foot difference in elevation for a distance of 30 feet approaching an arterial or 20 feet approaching a local road, measured from nearest ROW line (extended) of intersecting street.
Driveway Widths	Refer to standard details and the site development regulations
Entering sight distance	Refer to tables for geometric design criteria by functional classification.

Table ___.03-14 Driveway Intersection Design Standards	
Minimum Driveway Spacing	
From a roadway intersection	
Residential	Greater of 35 feet or posted speed limit (in feet)
Major driveway and	125 feet, from ROW boundary to driveway edge of pavement
Minor driveway	
Between driveways	125 feet centerline to centerline on the same parcel
From a side lot line	10 feet
Maximum Number of Driveways	One per 200 feet of street frontage (or minimum one per property owner)
Minimum Offset	
Two- or three-lane streets	Zero offset desirable
Four- or more-lane streets	100 feet
Minimum Angle	75 to 90 degrees
Minimum Curb Radius	
Commercial	25 feet
Residential	10 feet
Maximum Driveway Grade	5 percent (up to ROW line)
Maximum Landing Grade	Same as for street intersections.
Minimum Property Line Radius	20 feet
Maximum Driveway Widths	Refer to standard details for road approaches and the site development regulations.
Entering Sight Distance	Refer to tables for geometric design criteria by functional classification.

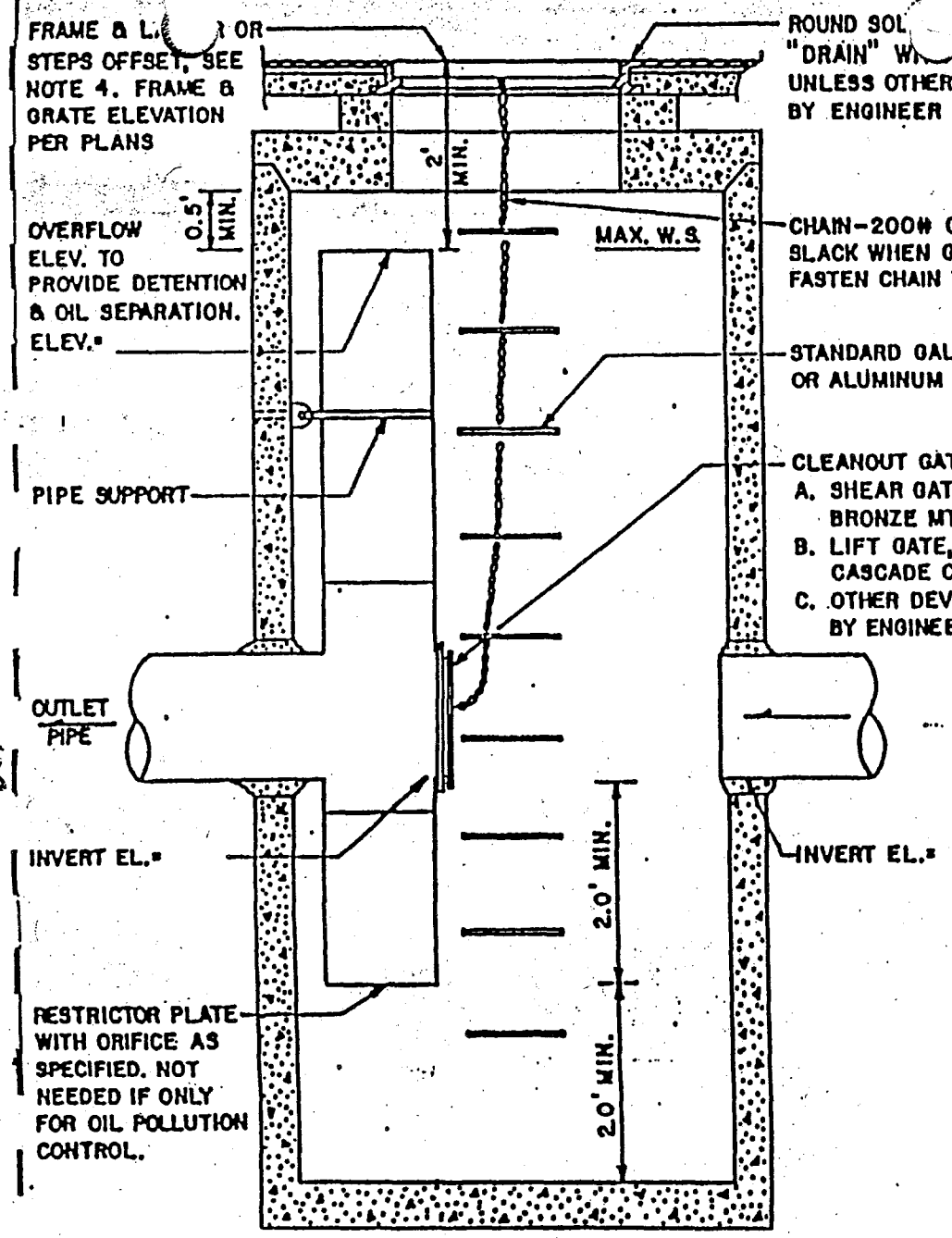




NOTE: ALL STEEL PARTS TO BE GALVANIZED AND ASPHALT COATED (TREATMENT I OR BETTER).

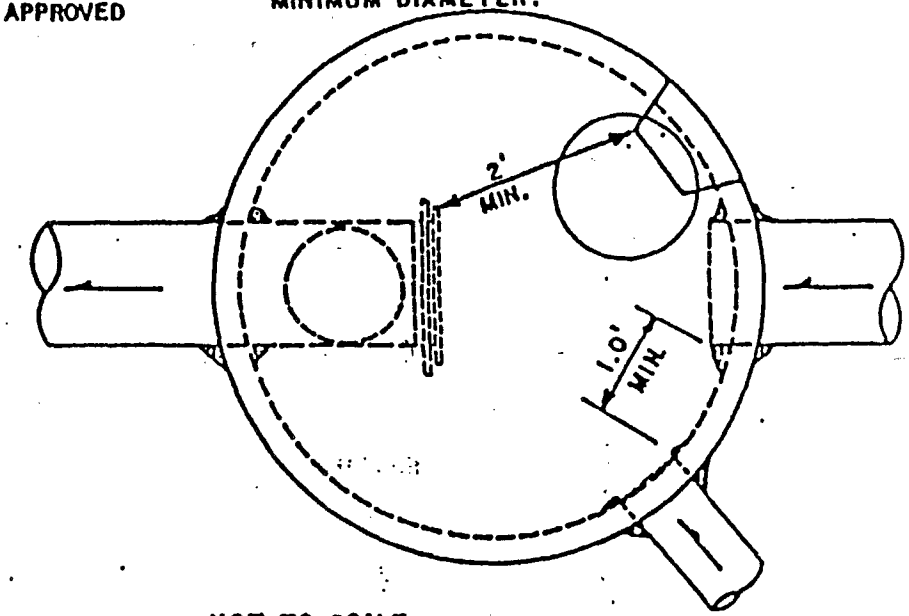
	ORIGINAL DRAWING		KLT
DA	REVISIONS	APPROV	RAWN

A.
TRASH RACK DETAIL



NOTES:

1. PIPE SIZES & SLOPES, PER PLANS
2. OUTLET CAPACITY NOT LESS THAN COMBINED INLETS
3. METAL PARTS:
   A. CORROSION RESISTANT OR GALVANIZED OR ALUMINUM TYPE 2
   B. IF GALVANIZED STEEL PIPE, HAVE ASPHALT TREATMENT 1
4. FRAME & LADDER OR STEPS OFFSET SO:
   A. CLEANOUT GATE IS VISIBLE FROM TOP
   B. CLIMBDOWN SPACE IS CLEAR OF RISER & CLEANOUT GATE
   C. FRAME IS CLEAR OF CURB
5. STRUCTURE SHALL BE A TYPE 2 CATCH BASIN 54" MINIMUM DIAMETER.

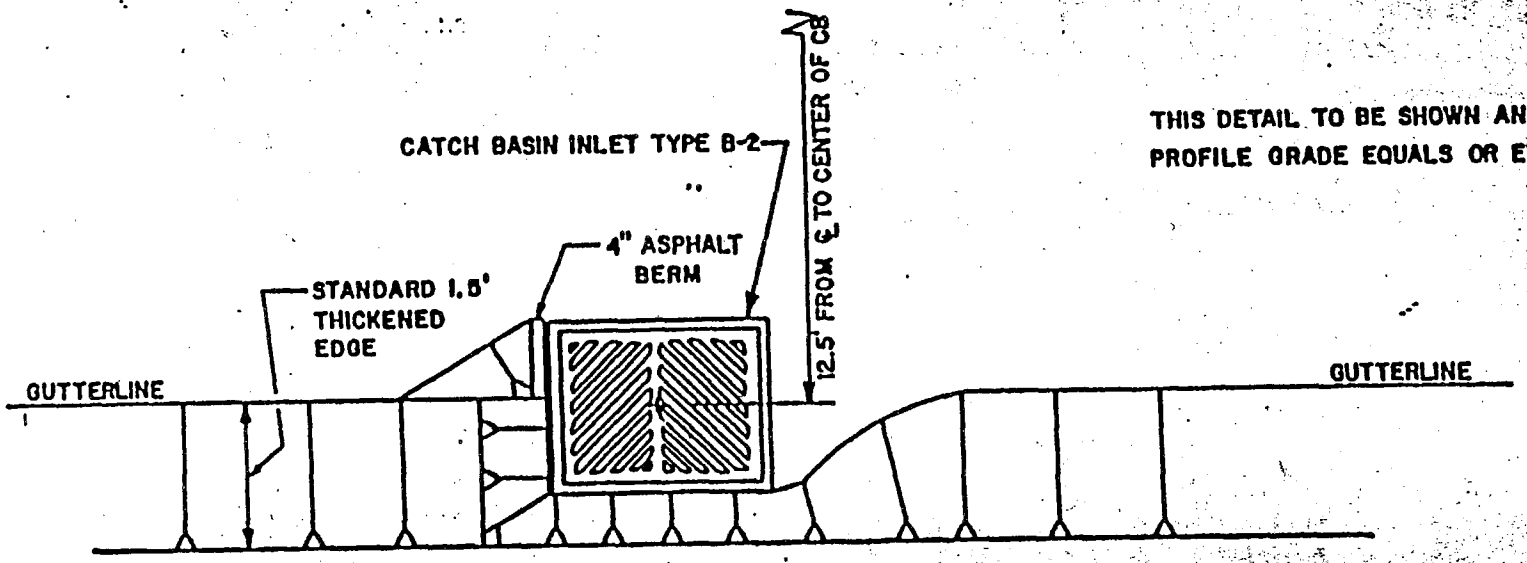


NOT TO SCALE

DA	REVISIONS	APPROVEL	AWN
4/8/91	REVISED STRUCTURE TO 54" MIN. DIAMETER		JAK
7/3/85	GENERAL REVISIONS		CBP
3/14/84	ORIGINAL DRAWING		"LT

B.

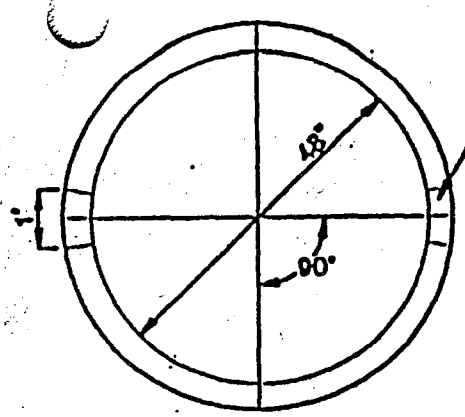
FLOW RESTRICTOR/OIL POLLUTION CONTROL DEVI



THIS DETAIL TO BE SHOWN AND CONSTRUCTED WHEN PROFILE GRADE EQUALS OR EXCEEDS 6 %.

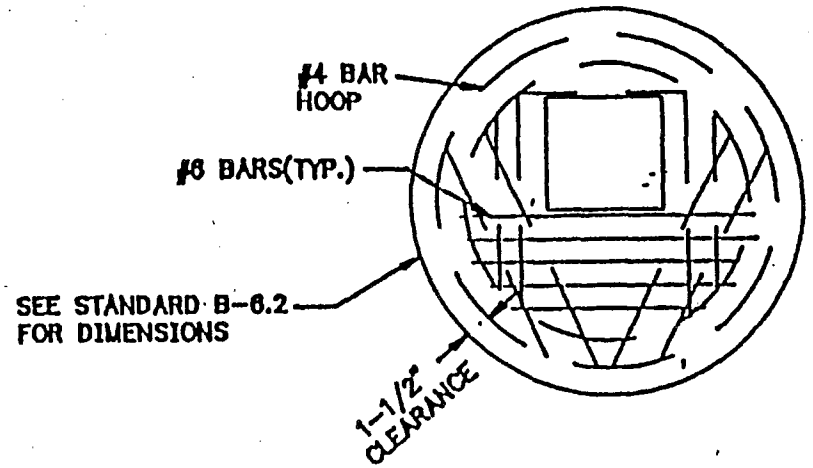
4	ORIGINAL DRAWING		KLT
DA..	REVISIONS	APPROVE	DRAWN

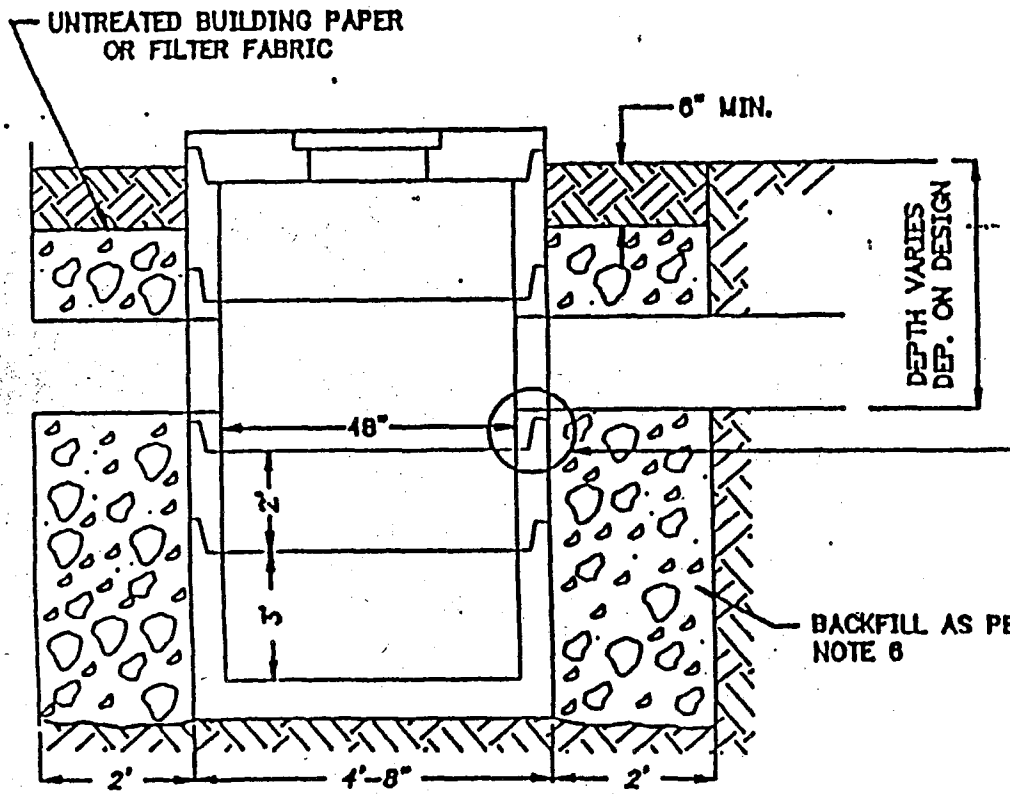
C.
CATCH BASIN INLET DETAIL

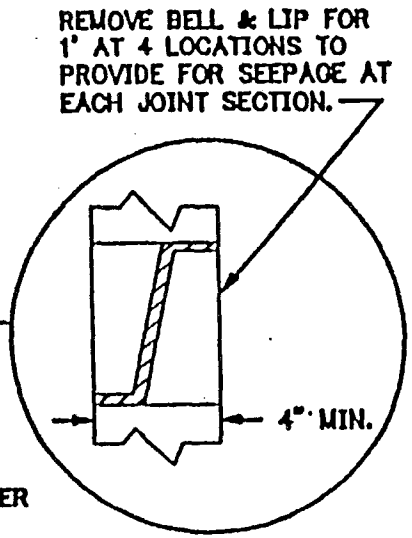


PLAN OF RING SECTION

TOP UNIT DETAIL







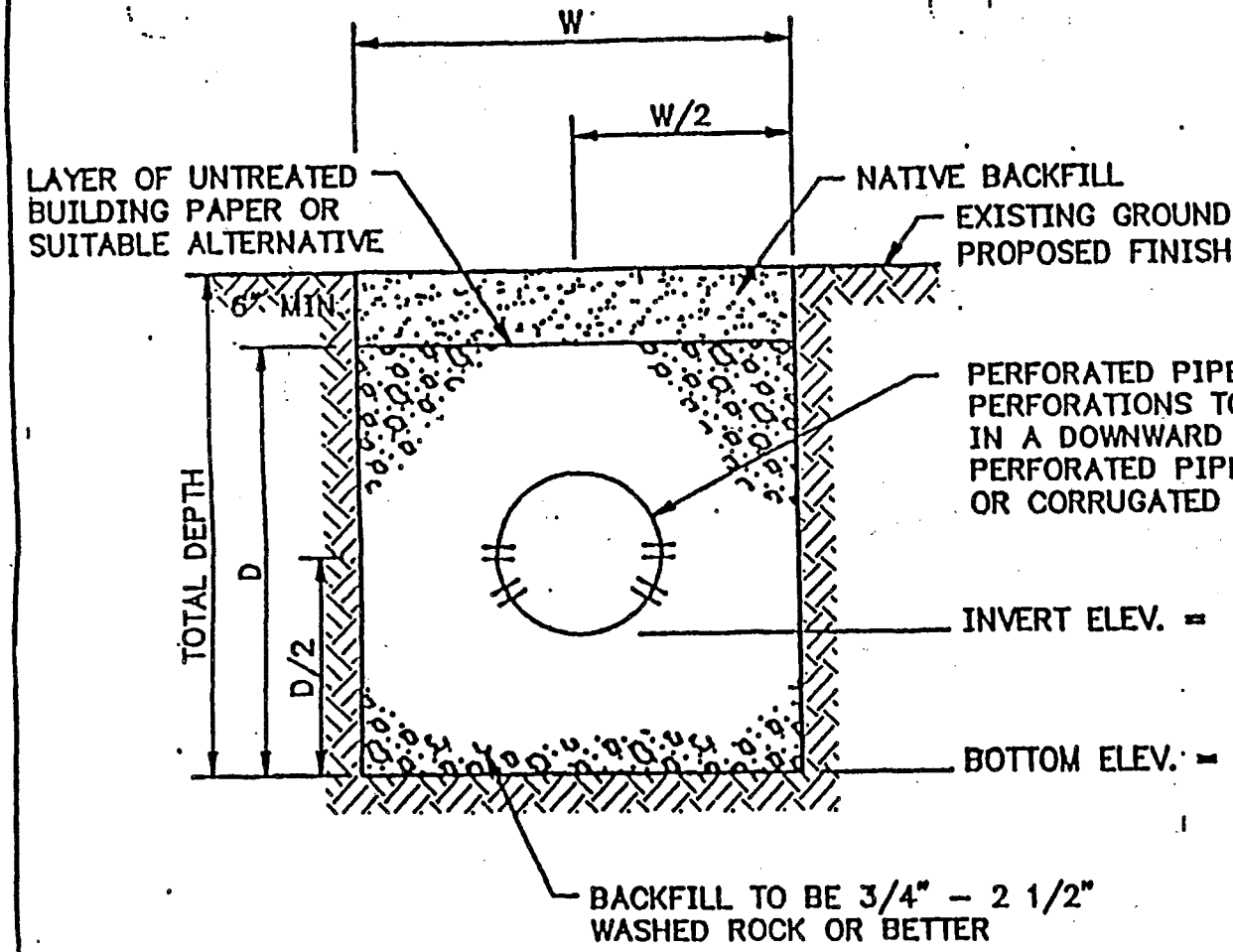
JOINT DETAIL

NOTES:

1. DRYWELL IS A TYPE II CATCH BASIN & MODIFIED AS SHOWN.
2. DRYWELL TO BE BUILT IN 1' OR 2' SECTIONS ONLY. EXCEPT FOR BASE WHICH SHALL BE A 3' SECTION
3. BASE SECTION TO BE PLACED ON STABLE GROUND
4. EACH DRYWELL SYSTEM SHALL HAVE AN OVERFLOW SYSTEM. SIZE TO BE DEPENDENT ON DESIGN CALCULATONS.
5. TOP UNIT SHALL MEET W.S.D.O.T. SPECIFICATIONS FOR A TYPE 2 CATCH BASIN.
6. BACKFILL SHALL BE 3/4 INCH TO 2 1/2 INCHES WASHED GRAVEL. MATERIAL PASSING THE #40 SIEVE SHALL NOT EXEED 2% BY WEIGHT.
7. FOR PERCOLATION TRENCH DETAIL SEE PAGE 5.

4 22 01	ORIGINAL DRAWING		JAK
D.	REVISIONS	APPROVED	DRAWN

D. STANDARD DRYWELL DETAIL



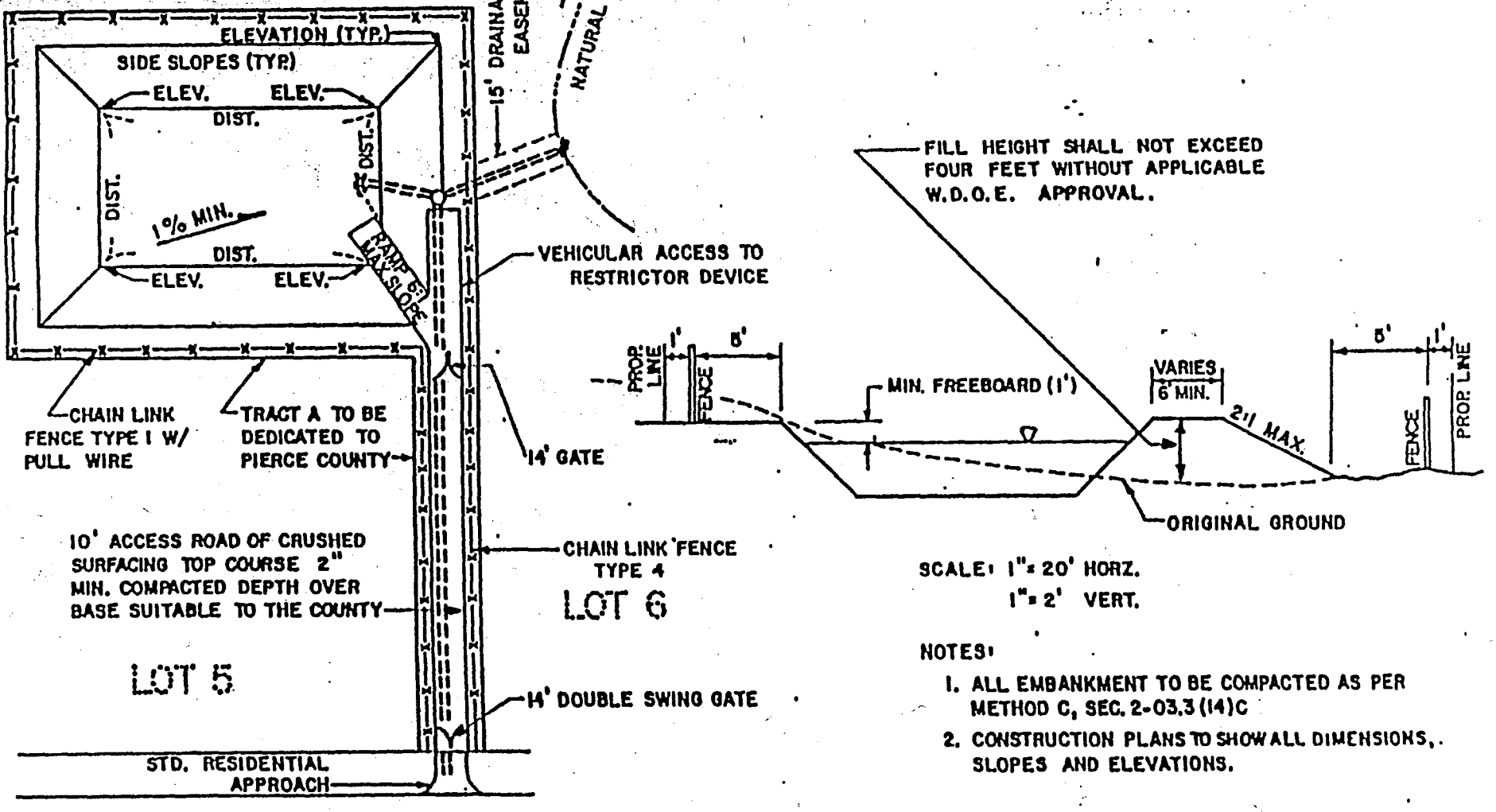
NOTES:

1. PIPE FOR STORM DRAIN PERCOLATION SYSTEMS SHALL MEET W.S.D.O.T SPECIFICATIONS FOR ZINC COATED (GALVANIZED) CORRUGATED IRON OR STEEL UNDERDRAIN PIPE (CHAPTER 9-04.2(4) OR PERFORATED CORRUGATED ALUMINUM ALLOY UNDERDRAIN PIPE (CHAPTER 9-04.2(5)).

2. PERFORATED CONCRETE UNDERDRAIN PIPE MEETING W.S.D.O.T. SPECIFICATIONS CHAPTER 9.05.2(2) AND A.A.S.H.T.O. DESIGNATION M175, TYPE 1, MAY BE USED WITH THE ADDITIONAL CONDITIONS: THE PERFORATIONS SHALL BE CIRCULAR AND A MINIMUM OF 1/2-INCH IN DIAMETER. THEY SHALL BE CLEANLY CUT AND THE INSIDE AND OUTSIDE OF THE PIPE SHALL BE PERFECTLY SMOOTH AND UNIFORM WITH EXCESS CONCRETE LEFT FROM THE HOLE PERFORATIONS PROCESS. THERE SHALL BE A MINIMUM OF 7 SETS OF PERFORATIONS WITH 2 HOLES PER SET OF PERFORATIONS FOR EACH 3-1/2 FEET OF PIPE LENGTH. RUBBER GASKETS OR GROUTING OF JOINTS FOR PERFORATED PIPE RUNS WILL NOT BE REQUIRED. INSPECTION OF THE PERFORATED CONCRETE PIPE SHALL BE MADE BY THE COUNTY BEFORE INSTALLATION OF THE PIPE IN THE GROUND.

22 91	ORIGINAL DRAWING		KWB
DATE	REVISIONS	APPRC	DRAWN

E. STORMWATER INFILTRATION TRENCH SECTION



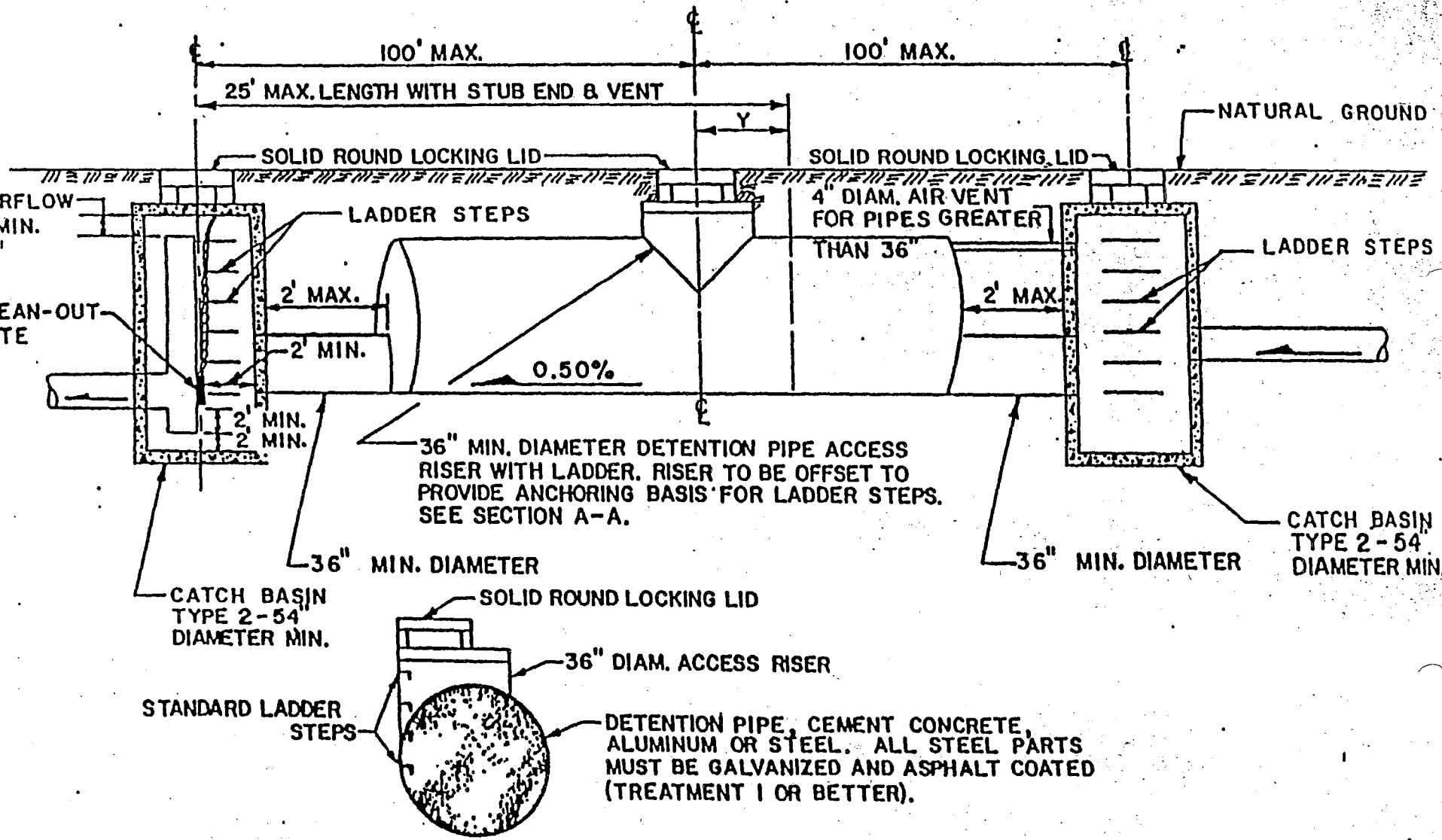
SCALE: 1"= 20' HORZ.
1"= 2' VERT.

NOTES:

1. ALL EMBANKMENT TO BE COMPACTED AS PER METHOD C, SEC. 2-03.3 (14)C
2. CONSTRUCTION PLANS TO SHOW ALL DIMENSIONS, SLOPES AND ELEVATIONS.

DA.	REVISIONS	APPROVED	DWN
4/8/91	SET MAX. EMBANKMENT HEIGHT		JAK
7/5/85	GENERAL REVISIONS		CBP
3/21/8[illegible]	ORIGINAL DRAWING		[illegible]LT

F. STANDARD BASIN DETAIL

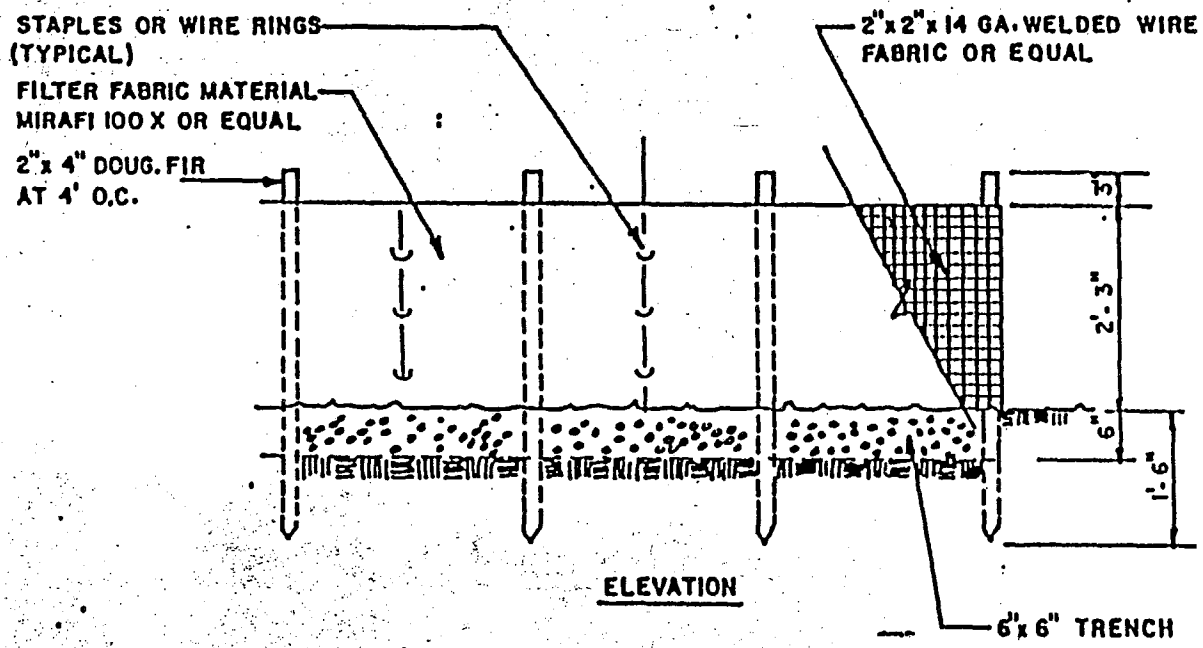


SECTION A-A
NO SCALE

Y - THIS DISTANCE TO BE A MINIMUM OF 3' WHEN STUBBED END IS UTILIZED

4 16 9	ADDED PIPE TYPE		JAK
7	GENERAL REVISIONS		BP
3	ORIGINAL DRAWING		WG
	REVISIONS	APPROVED	AWN

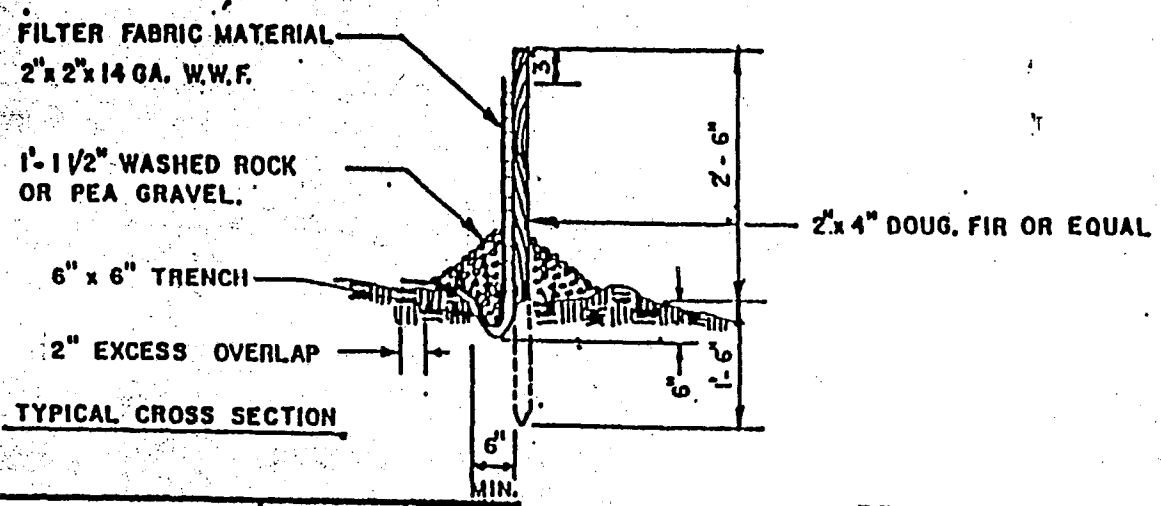
G. TYPICAL CLOSED DETENTION PIPE DETAI



ELEVATION

NOTES:

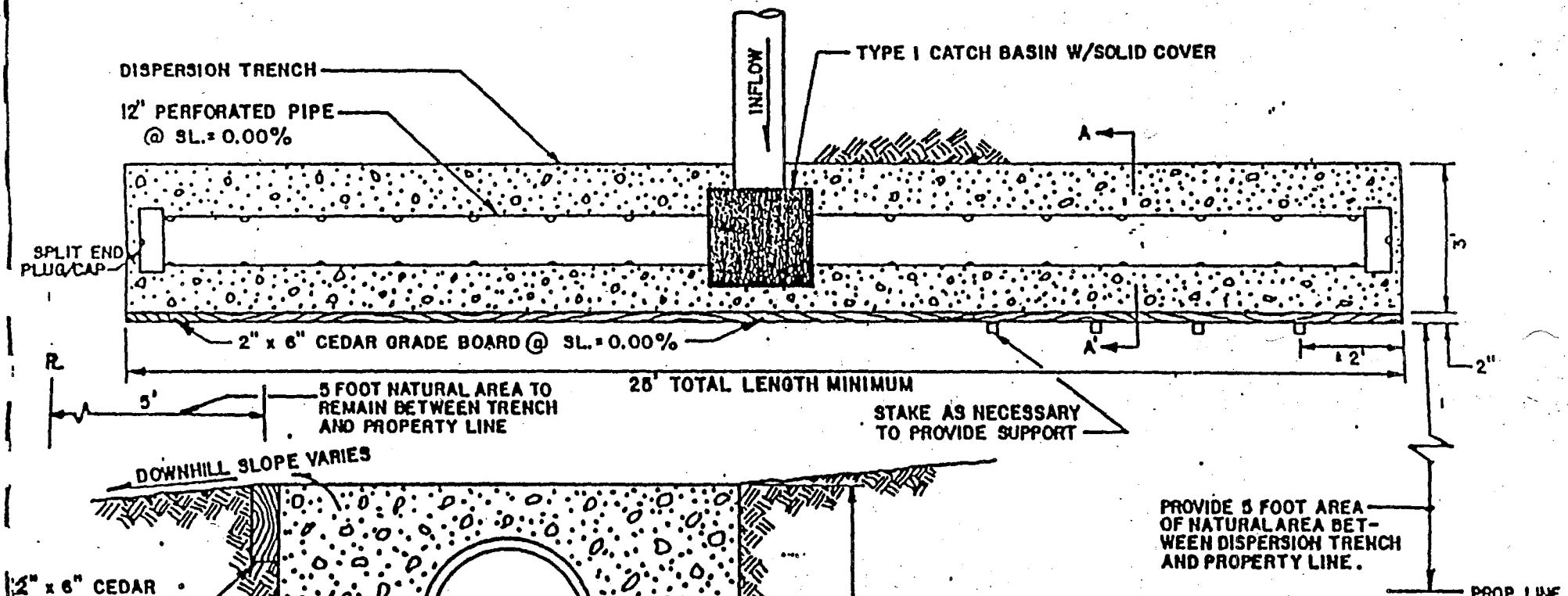
1. PLACE 1' OF 3/4"—1-1/2" WASHED ROCK OR PEA GRAVEL ON BOTH SIDES OF FENCE TO CREATE A BEVEL SHAPE.
2. FABRIC SHALL COVER BOTTOM OF 6" x 6" TRENCH AND EXTEND BEYOND THE LIMITS OF THE GRAVEL IN ORDER TO MAINTAIN AN EXCESS OVERLAP OF 2" MINIMUM AS SHOWN IN TYPICAL CROSS-SECTION.



TYPICAL CROSS SECTION

26/84	ORIGINAL DRAWING		C.W.I.
ATE	REVISIONS	APPROVED	DRAWN

11. SILTATION FENCE DETAIL

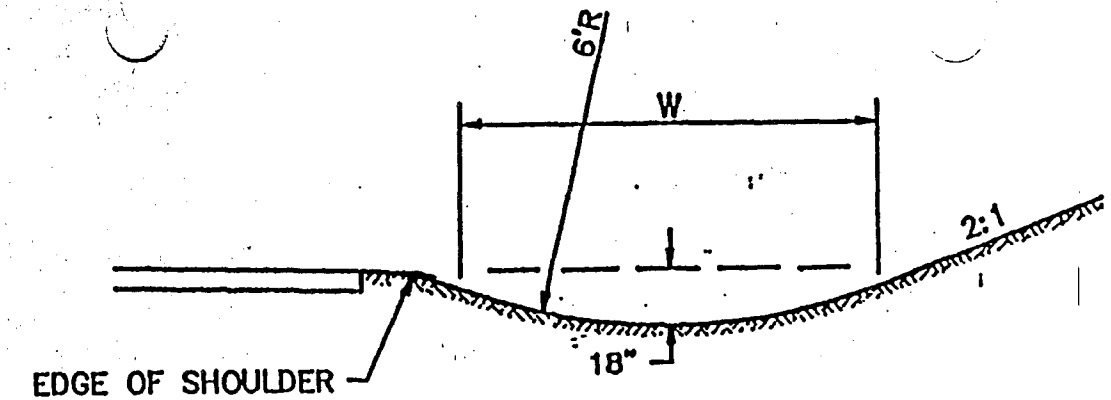


PLAN
SCALE 1"=3'

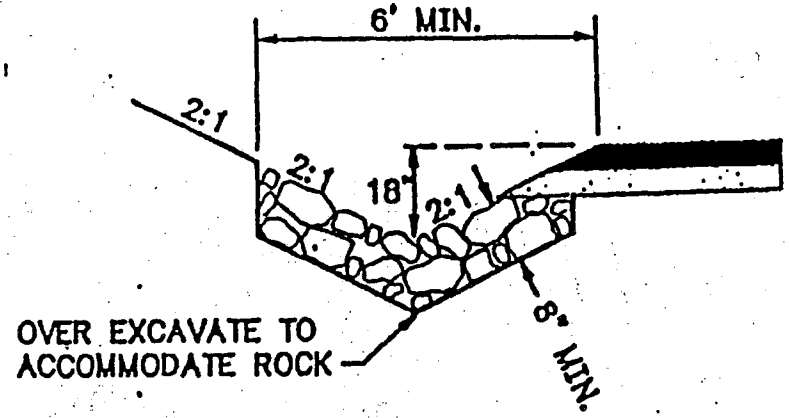
SECTION A-A'
SCALE 1"=1'

7/5/85	GEN. REVISIONS		CBP
5	GEN. REVISIONS		RJB
0	ORIGINAL DRAWING		KLT

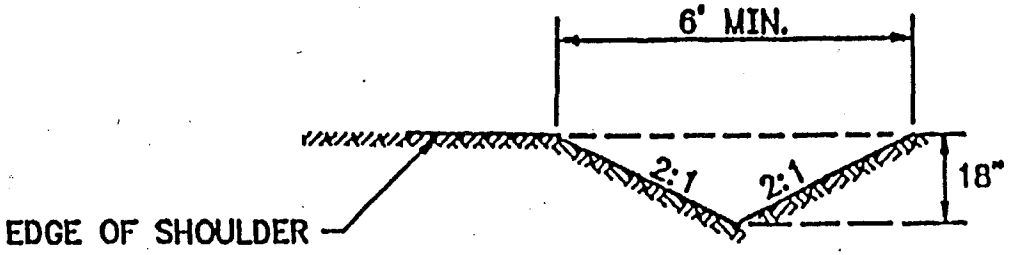
I. DISPERSAL TRENCH DETAIL



CIRCULAR



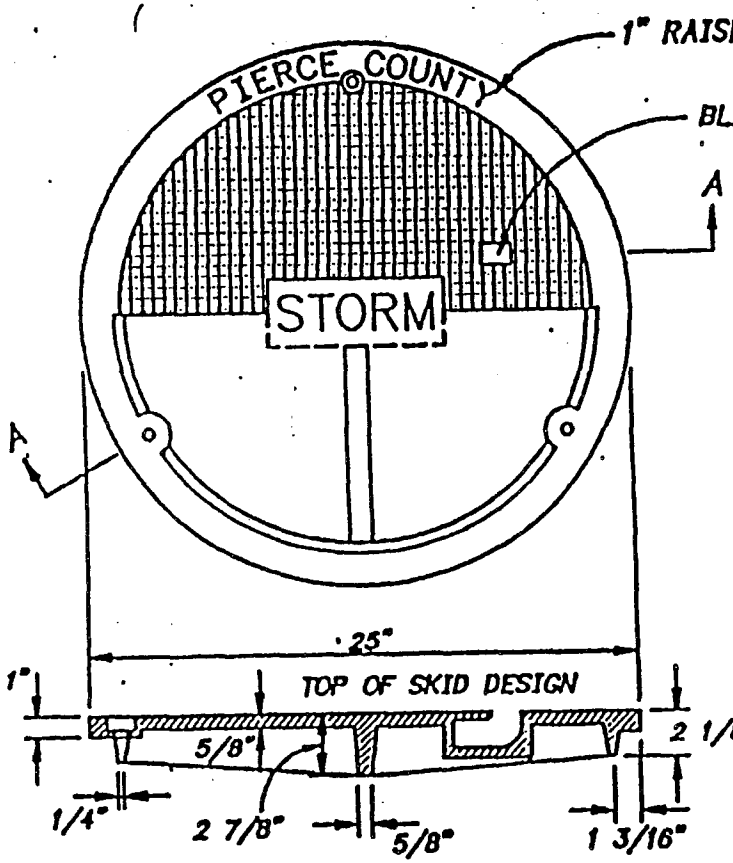
ROCK–LINED TRIANGULAR
OR CIRCULAR DITCH



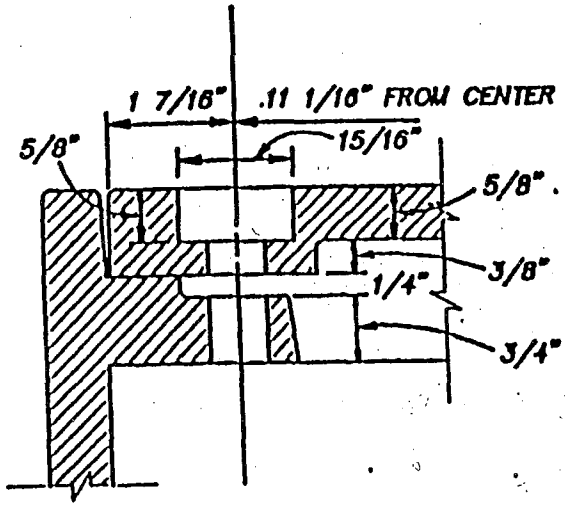
TRIANGULAR

4 [illegible] 91	ORIGINAL DRAWING		KWB
DA	REVISIONS	APPROVE	RAWN

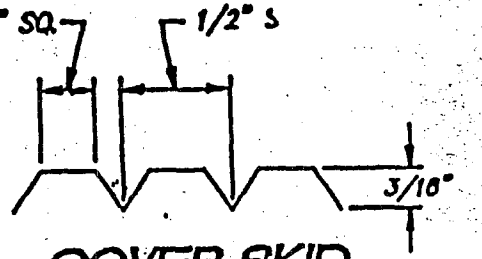
J. DITCH DETAILS



SECTION A-A



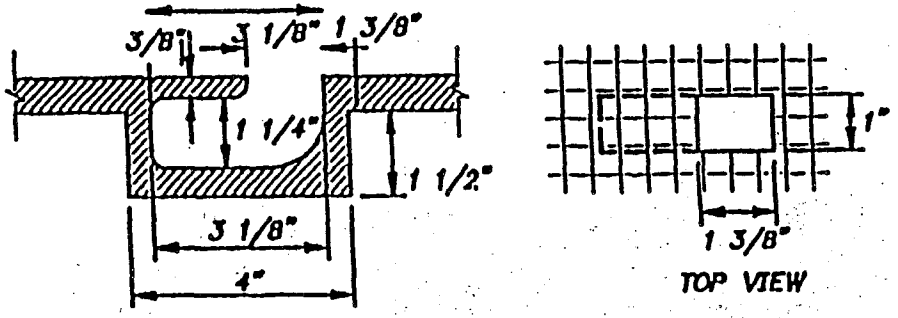
BOLT-DOWN DETAIL



COVER SKID DESIGN DETAIL

NOTES:

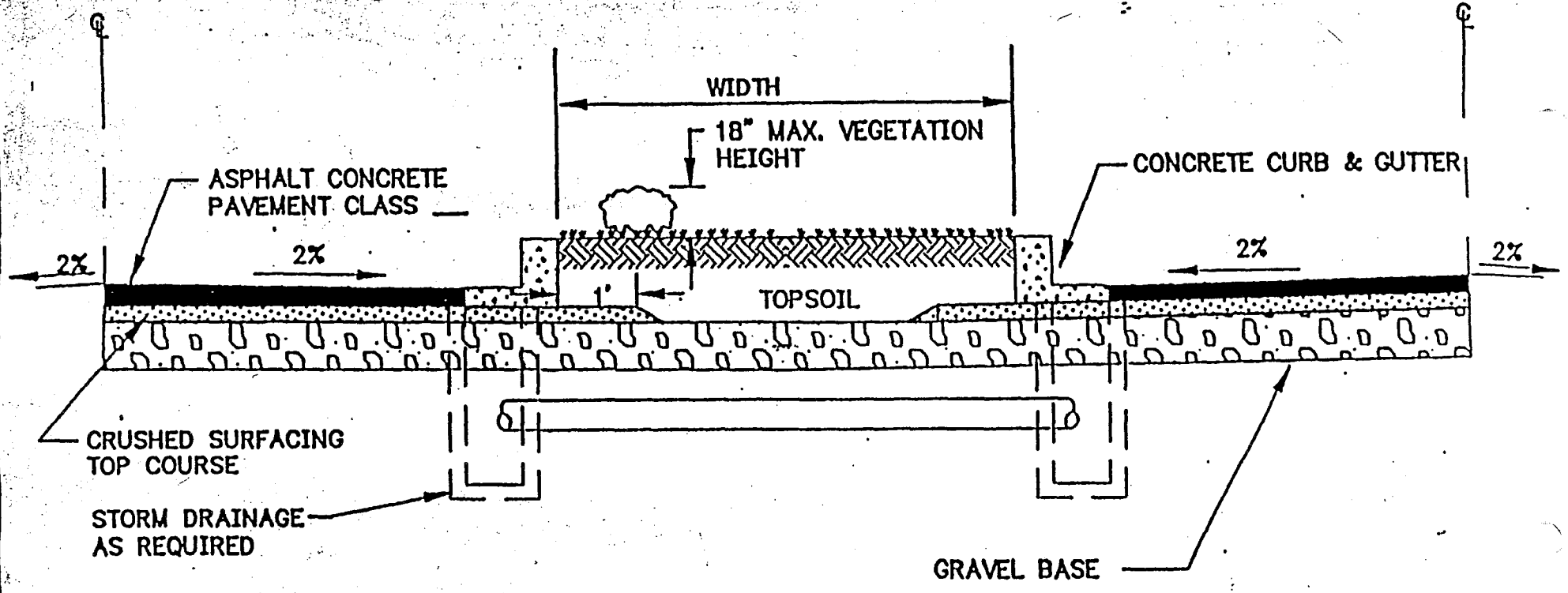
1. USE WITH THREE LOCKING BOLTS 3/8"-11 NC STAINLESS TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) CAP SCREWS 2" LONG. DRILL HOLES SPACED 120° AT 11 1/16" RADIUS.
2. MATERIAL IS DUCTILE IRON ASTM A 536 GRADE 80-55-06.



BLIND PICK NOTCH DETAIL

4-22-91	ORIGINAL DRAWING		JAK
E	REVISIONS	APPRO	DRAWN

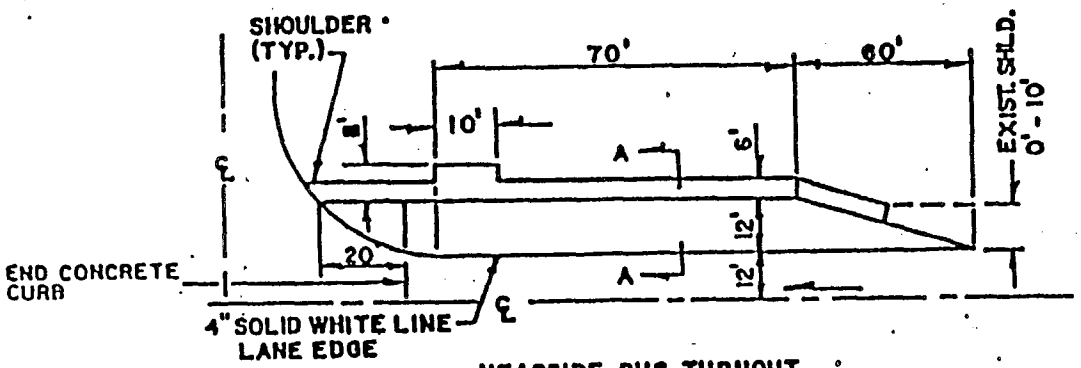
K. SOLID LOCKING LID



611.

4 22 91	ORIGINAL DRAWING		JAK
DA	REVISIONS	APPROVEI	AWN

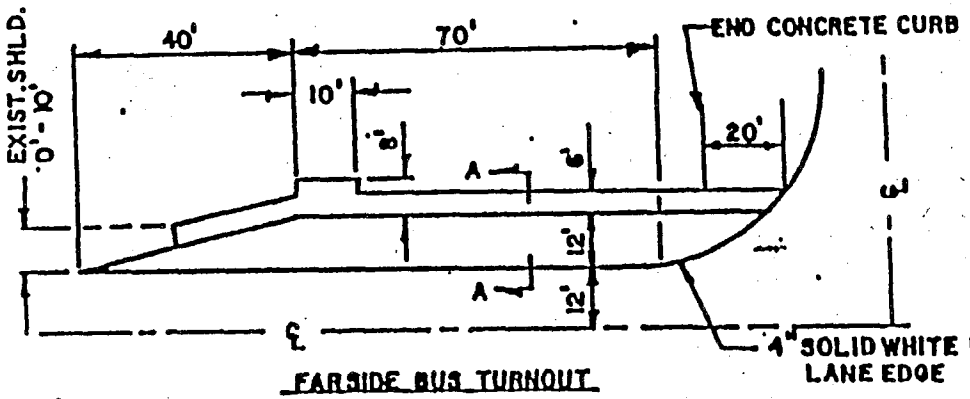
L. MEDIAN DETAIL



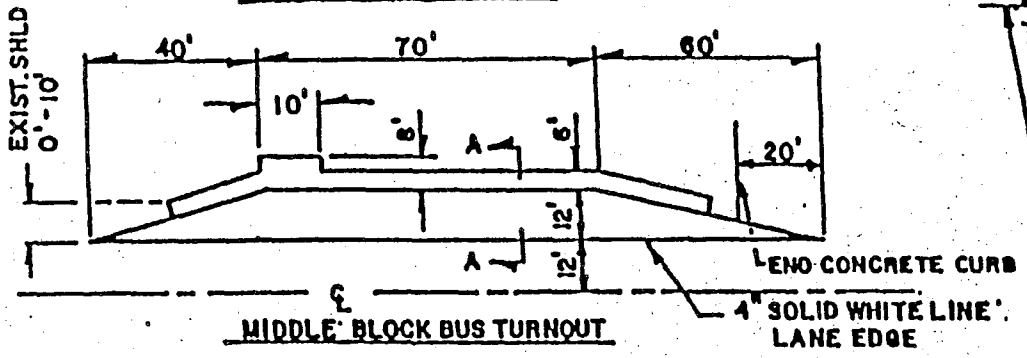
NEARSIDE BUS TURNOUT

NOTES.

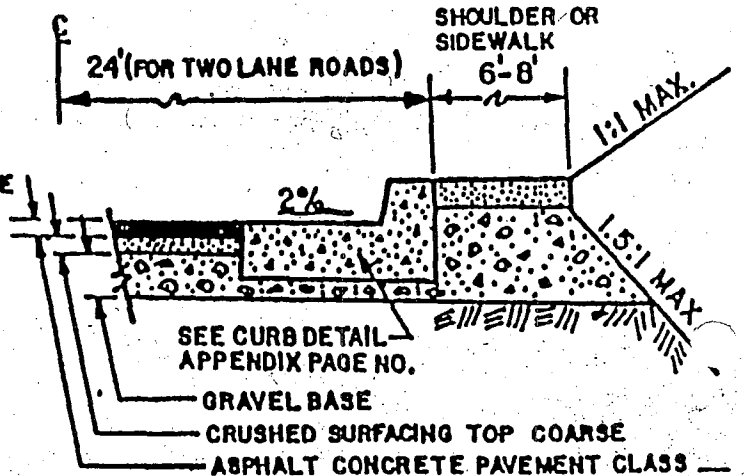
1. STORM DRAINAGE FACILITIES MUST BE INSTALLED AS REQUIRED BY EXISTING TOPORAPHIC CONDITIONS.
2. PIERCE COUNTY TRAFFIC OPERATIONS TO BE CONTACTED BEFORE STRIPING IS DONE.
3. ADD 60 FEET FOR EACH ADDITIONAL BUS IN LOADING AREA.
4. EXISTING ROADS LESSTHAN 12 FEET WIDE MUST BE WIDENED AS NECESSARY TO ACCOMODATE THE TURNOUT.



FARSIDE BUS TURNOUT



MIDDLE BLOCK BUS TURNOUT

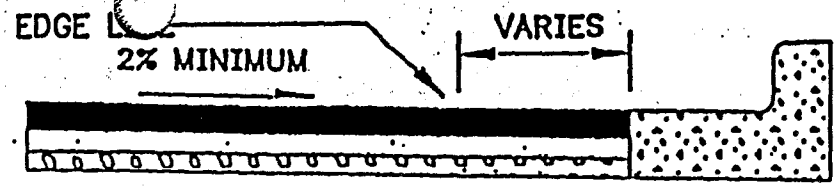


SECTION A-A

DO NOT SCALE

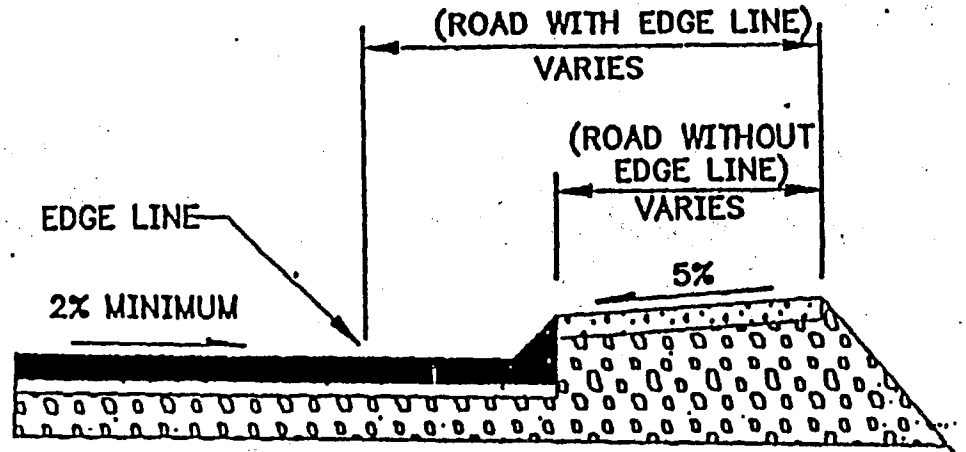
4/8/91	REVISED SUBGRADE AND PAVING DEPTHS		JAK
7/5/85	GEN. REVISIONS		CBP
1/86	ORIGINAL DRAWING		RJB
E	REVISIONS	APPR	DRAWN

M. SHOULDER WIDENING FOR BUS TURNOUT

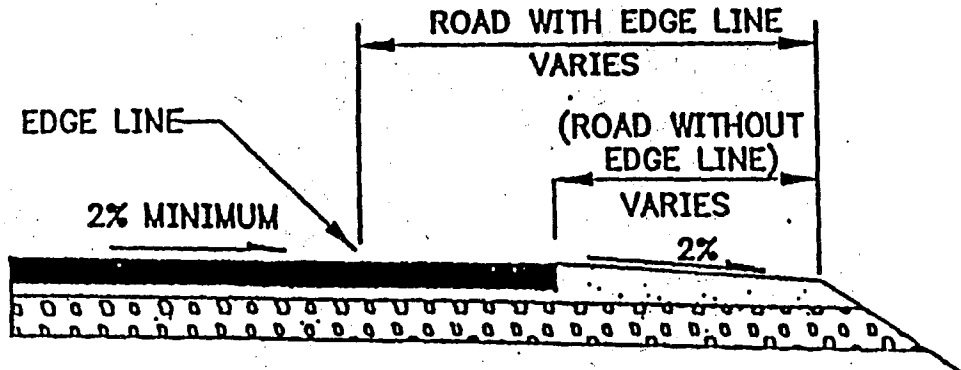


SHOULDER WITH VERTICAL CONCRETE CURB & GUTTER

1. PAVEMENT STRUCTURE OF ASPHALT SHOULDER SHALL MATCH ROAD PAVEMENT STRUCTURE.
2. GRAVEL SHOULDER SHALL BE 2" MINIMUM COMPACTED DEPTH OF CRUSHED SURFACING TOP COURSE OVER 6" GRAVEL BASE.



ROLLED CONCRETE CURB, 6" ASPHALT WEDGE CURB OR 4" ASPHALT WEDGE CURB

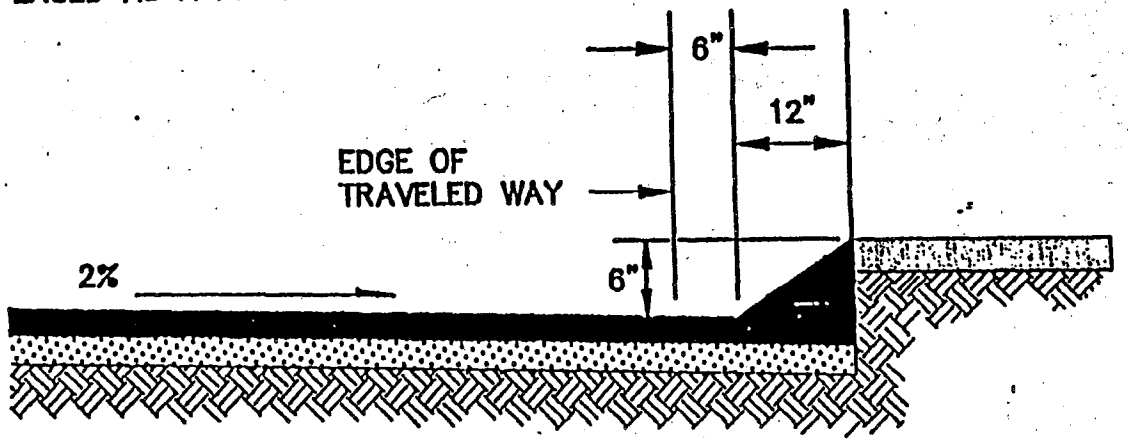


ROLLED CONCRETE CURB, 6" ASPHALT WEDGE CURB OR 4" ASPHALT WEDGE CURB

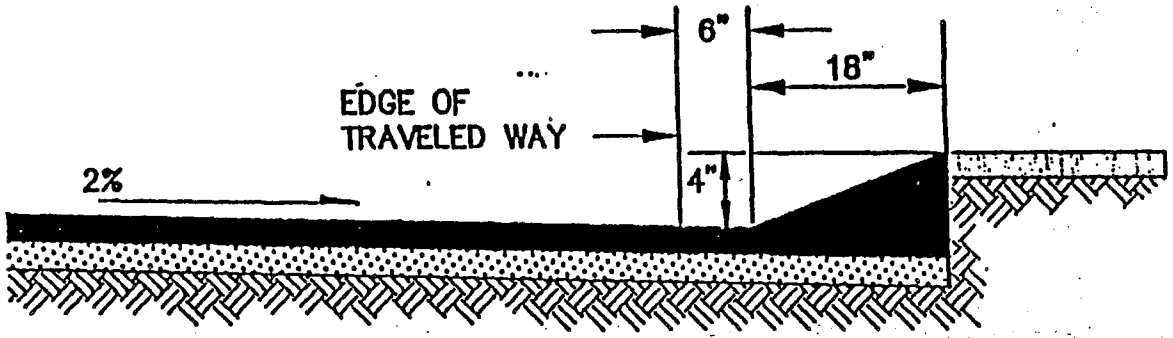
4 22 91	ORIGINAL DRAWING		JAK
DA	REVISIONS	APPROVED	AWN

N. SHOULDER DETAILS

1. CURBS TO BE ASPHALT CONCRETE PAVEMENT CLASS B PER W.S.D.O.T. SPECIFICATIONS.
2. CURB SHALL BE PLACED AS A PART OF THE ROAD PAVEMENT.



ASPHALT CONCRETE PAVEMENT CURB A

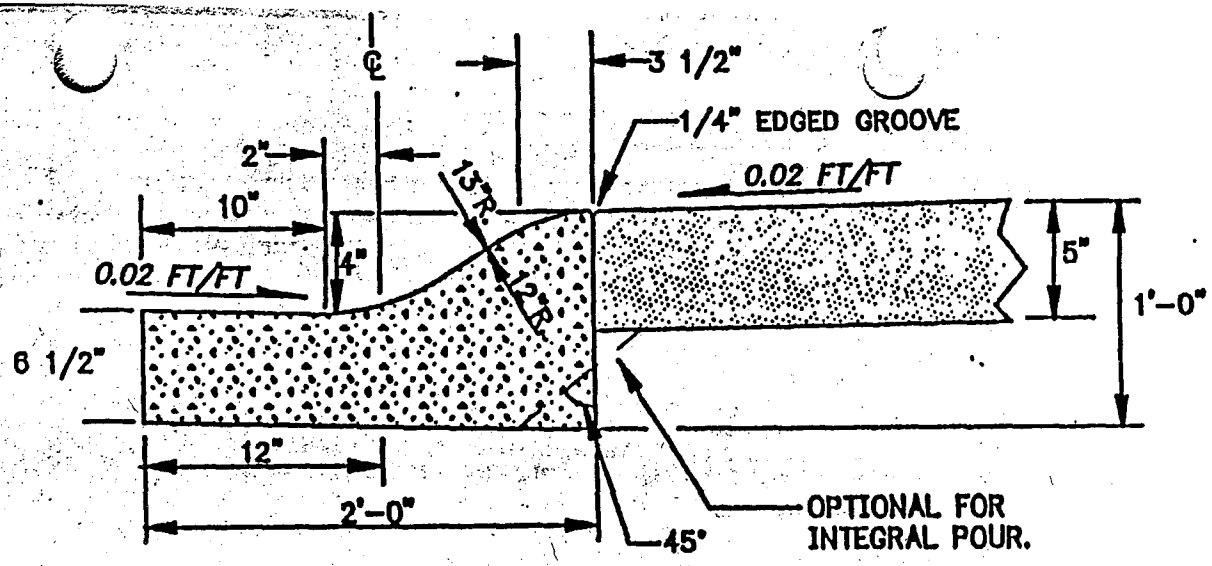


ASPHALT CONCRETE PAVEMENT CURB B

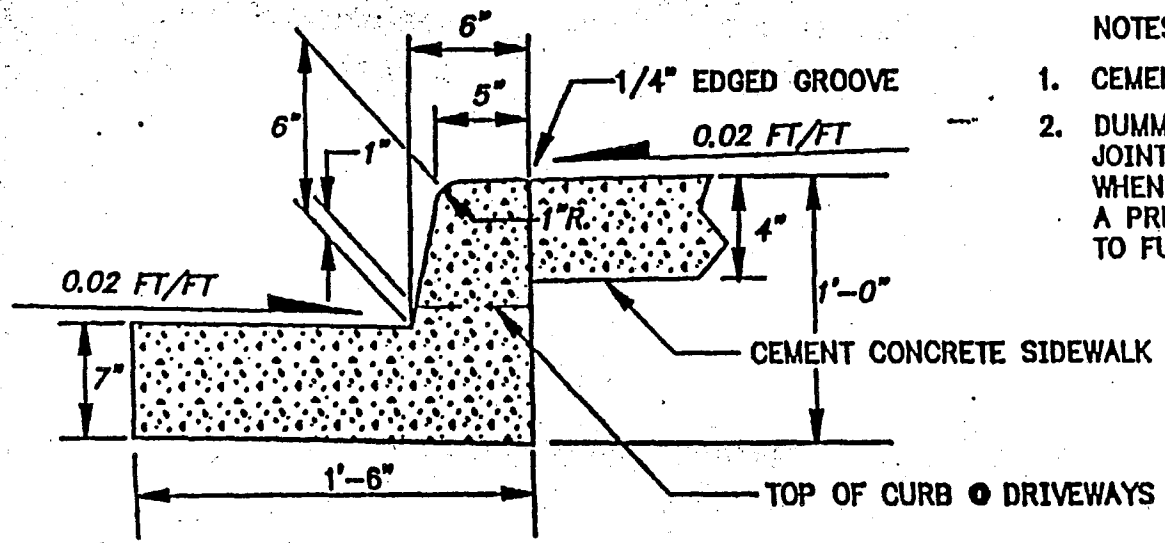
122

2 91	ORIGINAL DRAWING		JAK
ATE	REVISIONS	APPROV	DRAWN

ASPHALT CONCRETE WEDGE CURBS



CEMENT CONCRETE ROLLED CURB.



CEMENT CONCRETE CURB & GUTTER

NOTES:

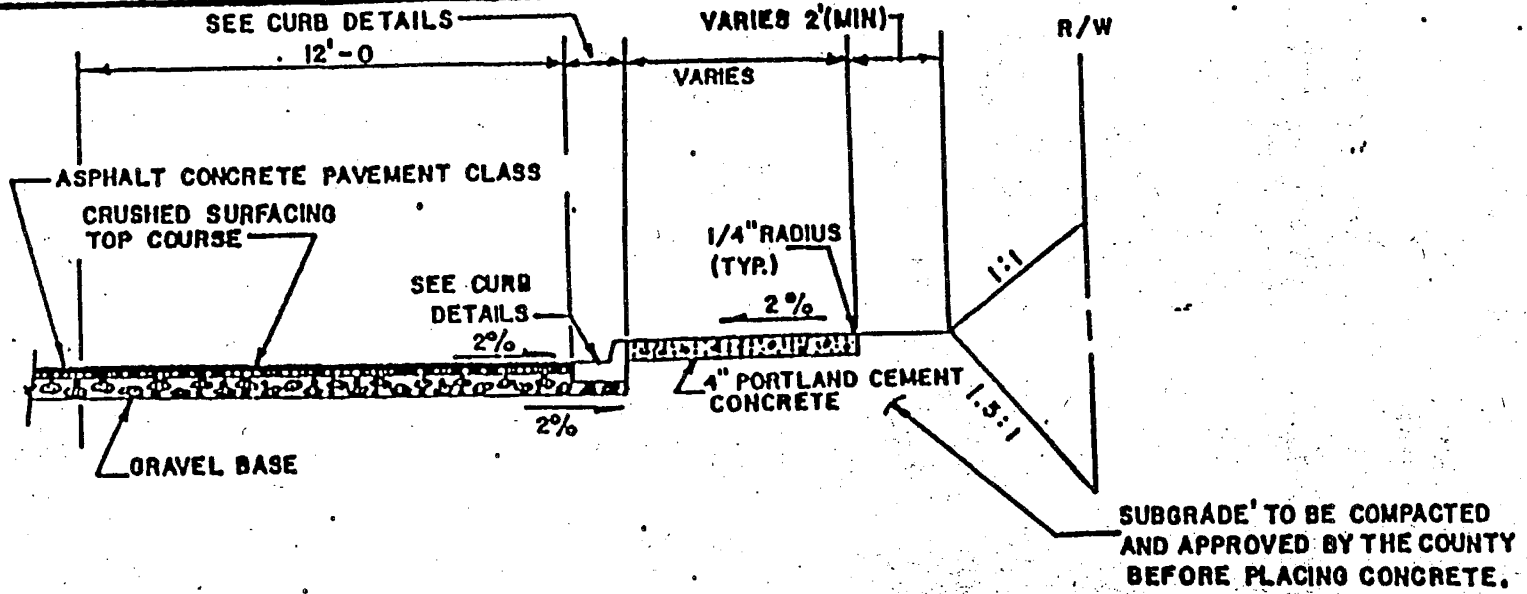
1. CEMENT CONCRETE SHALL BE CLASS B.
2. DUMMY JOINTS CONSISTING OF 3/16" BY 2" PREMOLDED JOINT MATERIAL SHALL BE PLACED AT 15 FOOT INTERVALS. WHEN CURBS ARE PLACED BY SLIP FORMING, A PREMOLDED STRIP UP TO 1/2" THICK AND UP TO FULL DEPTH MAY BE USED.

DA	REVISIONS	APPROVED	DRAWN
7 22 92	REMOVED CEMENT CONCRETE SIDEWALK		KWB
4 22 91	ORIGINAL DRAWING		JAK

P.

CEMENT CONCRETE CURB AND GUTTER DETAILS

123



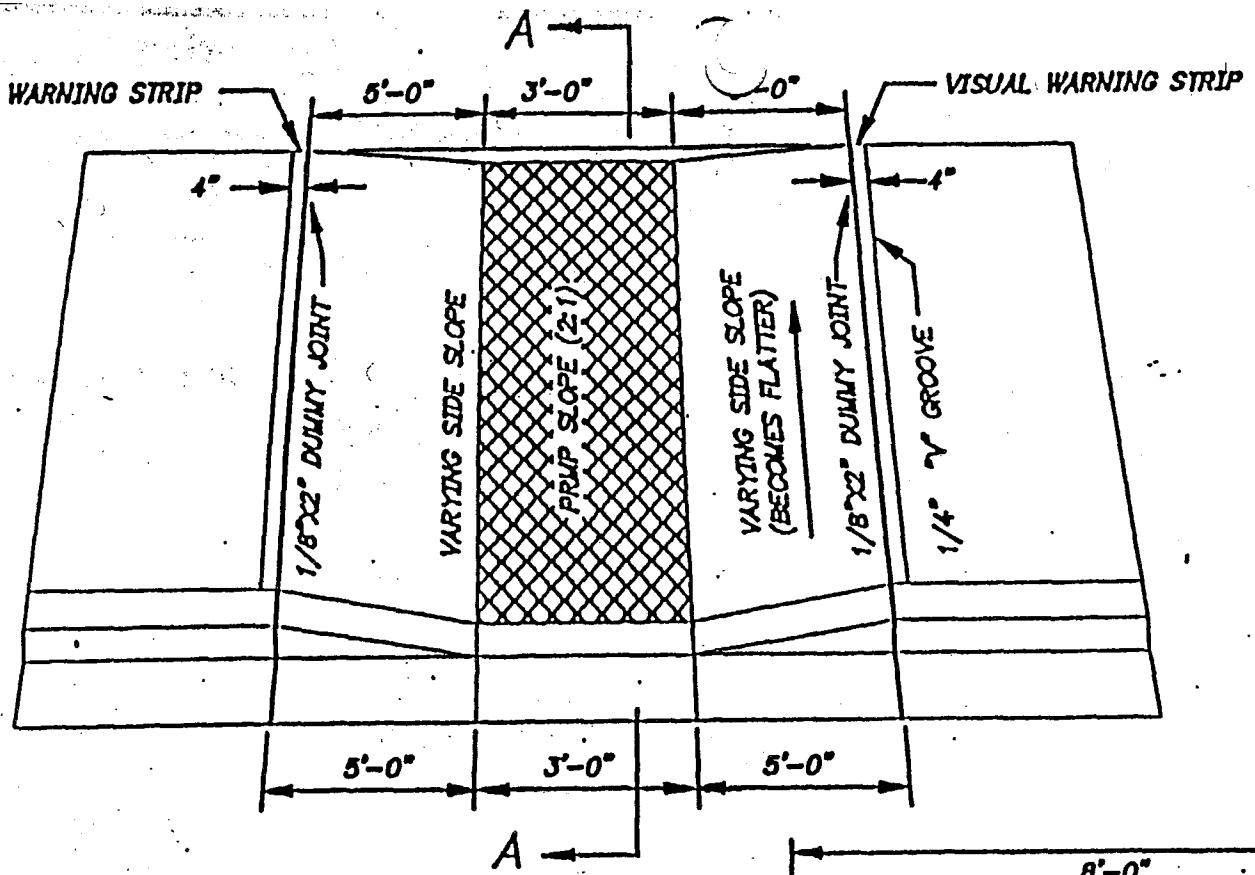
NOTES.

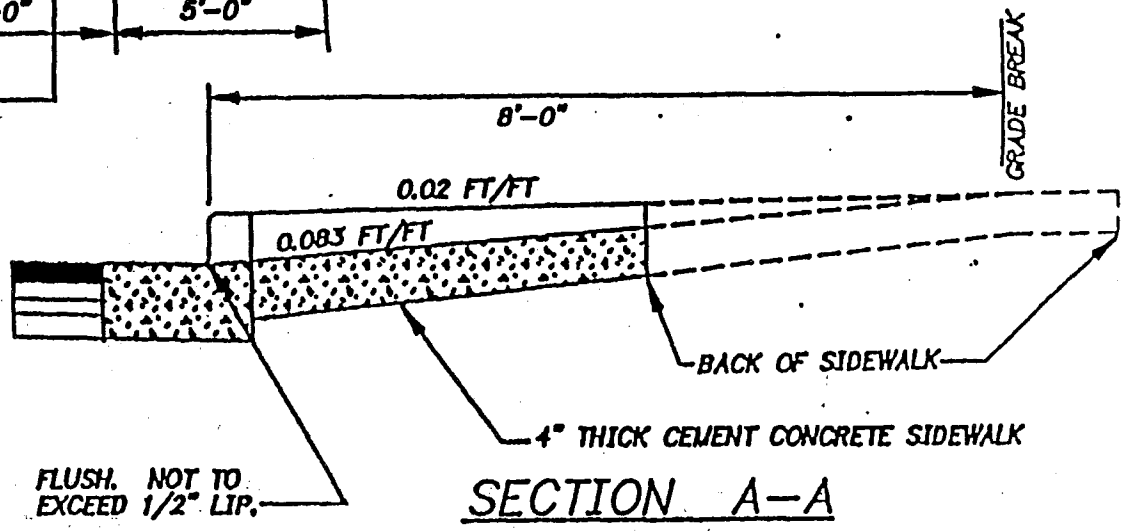
1. THE CEMENT CONCRETE SHALL BE AIR ENTRAINED CONCRETE CLASS B.
2. TRANSVERSE EXPANSION JOINTS (1/4"X 4") TO BE CONSTRUCTED AT APPROXIMATELY 15' INTERVALS OR AS DESIGNATED BY THE COUNTY.
3. CURB RAMPS SHALL BE CONSTRUCTED AT LOCATIONS AS REQUIRED BY THE COUNTY. IN ACCORDANCE WITH W.S.D.O.T. STANDARD PLANS.
4. TOTAL RIGHT-OF-WAY TO BE CLEARED, GRUBBED AND GRADED TO CREATE UNIFORM AND SMOOTH SIDEWALK PROFILE.
5. HORIZONTAL AND VERTICAL LOCATION OF THE SIDEWALK WITHIN THE RIGHT-OF-WAY SHALL BE DETERMINED BY THE COUNTY. APPROVED, DETAILED CONSTRUCTION PLANS SHALL BE OBTAINED AND ALL OTHER REQUIREMENTS OF THE COUNTY MET BEFORE WORK COMMENCES IN COUNTY RIGHT-OF-WAY. CONCRETE CURB SHALL BE INSTALLED IN CONJUNCTION WITH SIDEWALK CONSTRUCTION WHERE REQUIRED BY THE COUNTY.
6. STORM DRAIN PERCOLATION SYSTEMS WILL NOT BE PERMITTED UNDER THE SIDEWALK.

DO NOT SCALE

4/8/91	DELETED CONCRETE CURB DETAIL		JAK
7/5/85	GENERAL REVISIONS		CBP
[illegible]	ORIGINAL DRAWING		RJB
F.	REVISION	APPROVE	AWN

Q. SIDEWALK SECTION AND CONCRETE CURB DETA[illegible]





SECTION A–A

NOTES
1. RAMP AND APPROACHES SHALL BE CLEAR OF OBSTACLES INCL. HYDRANTS, POLES & INLETS.
2. RAMP SHALL BE TEXTURED BY IMPRINT OF METAL GRID WITH 1/2" SPACING.
3. VISUAL WARNING STRIP SHALL BE PROVIDED 4" WIDE BETWEEN EXPANSION AND SCORED (CONTRACTION) JOINTS.

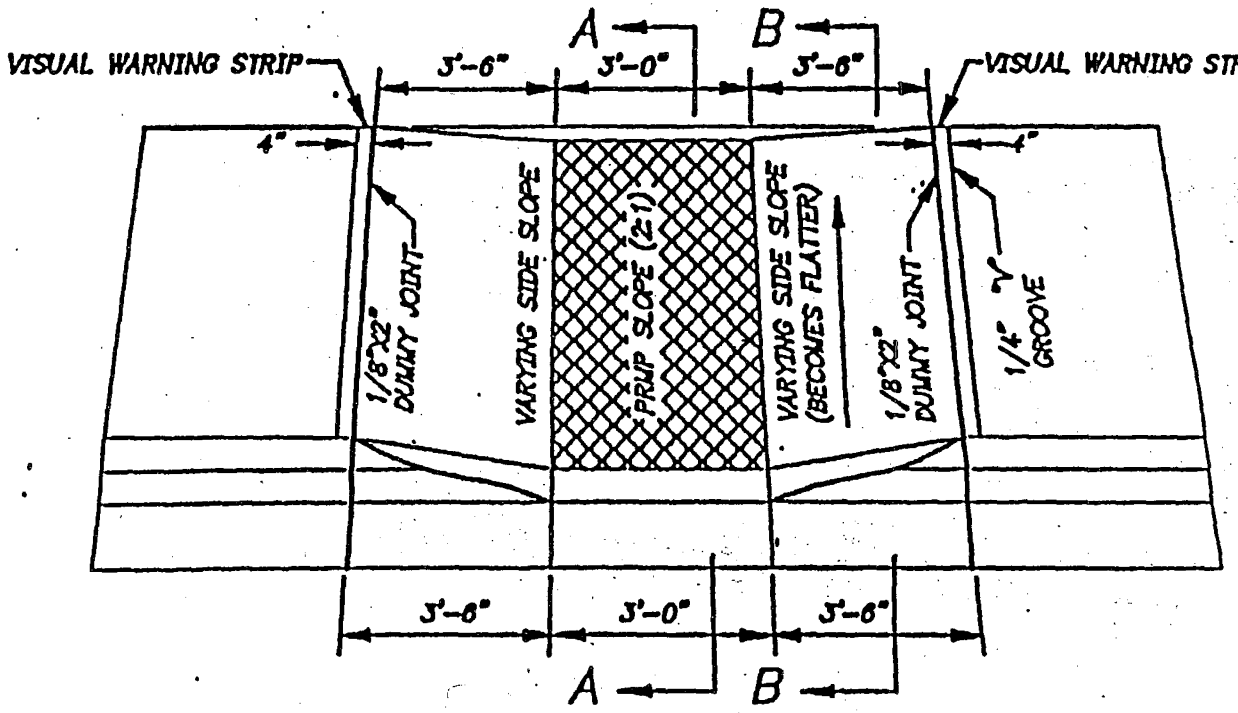
DATE	REVISIONS	APPROVED	
4 22 91	ORIGINAL DRAWING		JAK

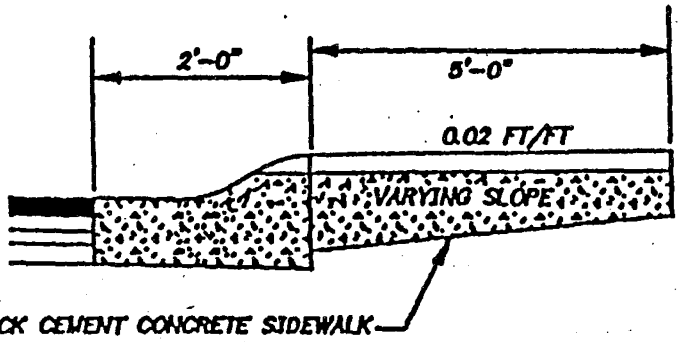
R. CURB RAMPS IN VERTICAL CURB

125

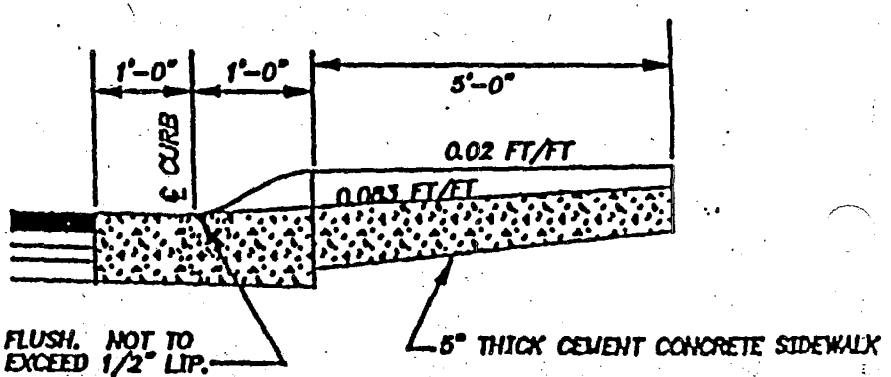
NOTES

1. RAMP AND APROACHES SHALL BE CLEAR OF OBSTACLES INCL. HYDRANTS, POLES & INLETS.
2. RAMP SHALL BE TEXTURED BY IMPRINT OF METAL GRID WITH 1/2" SPACING.
3. VISUAL WARNING STRIP SHALL BE PROVIDED 4" WIDE BETWEEN EXPANSION AND SCORED (CONTRACTION) JOINTS.





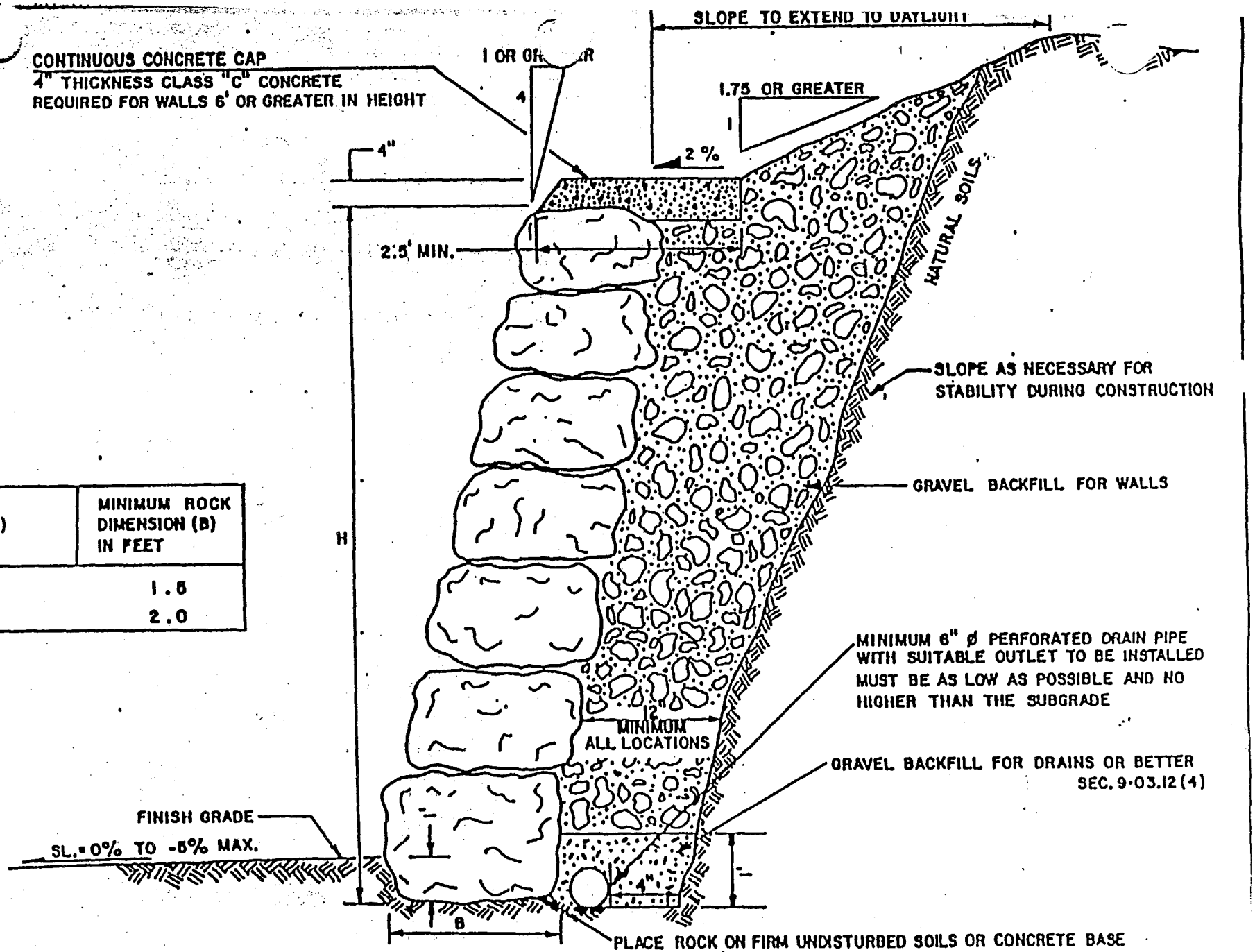
SECTION B-B



SECTION A-A

91	ORIGINAL DRAWING		JAK
	REVISIONS	APPROVED	DRAWN

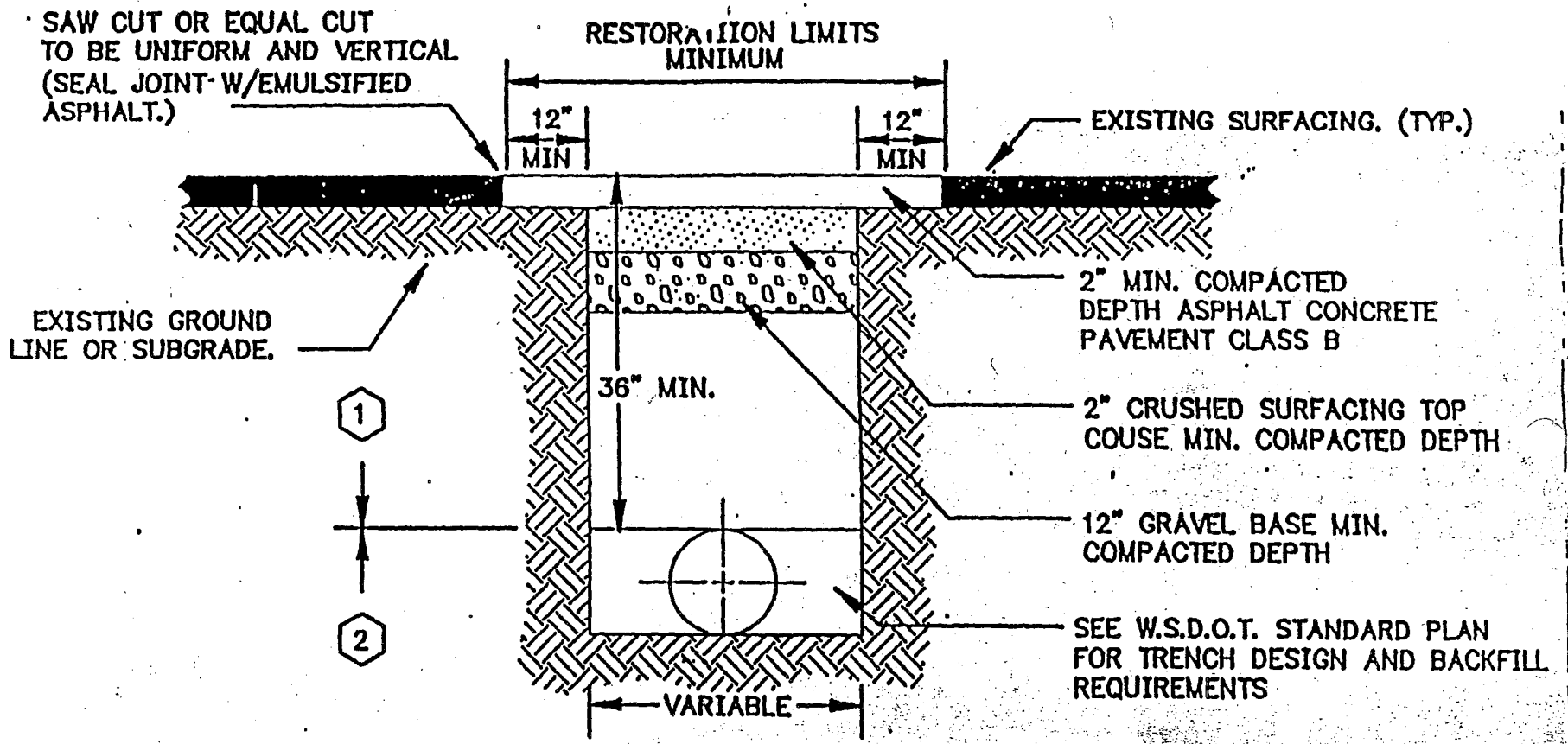
s. CURB RAMPS IN ROLLED C B



ROCKERY HEIGHT (H) IN FEET	MINIMUM ROCK DIMENSION (B) IN FEET
0 - 6	1.5
7 - 8	2.0

DATE	REVISIONS	APPROVED	DRAWN
4/8/91	REDUCED WALL HEIGHT TO 8 FOOT MAXIMUM		JAK
3/17/85	REVISE NOTE		AG
7/3/85	GENERAL REVISIONS		CBP
3/12/0[illegible]	ORIGINAL DRAWING		[illegible]T

T. ROCKWALL DETAIL



PATCH DETAIL

NO SCALE

NOTES:

1. ALL PATCHES ACROSS COUNTY ROADS, OR ROAD APPROACHES IN COUNTY RIGHT-OF-WAY SHALL CONFORM TO THIS DETAIL.
2. TEMPORARY PATCH TO BE:
   BACK FILLED AND COMPACTED TO EXISTING GROUND LINE AND PATCHED WITH TEMPORARY COLD MIX ASPHALT.
3. FOR LONGITUDINAL CUTS THE COUNTY MAY REQUIRE THE ENTIRE DRIVING LANE TO BE OVERLAID.

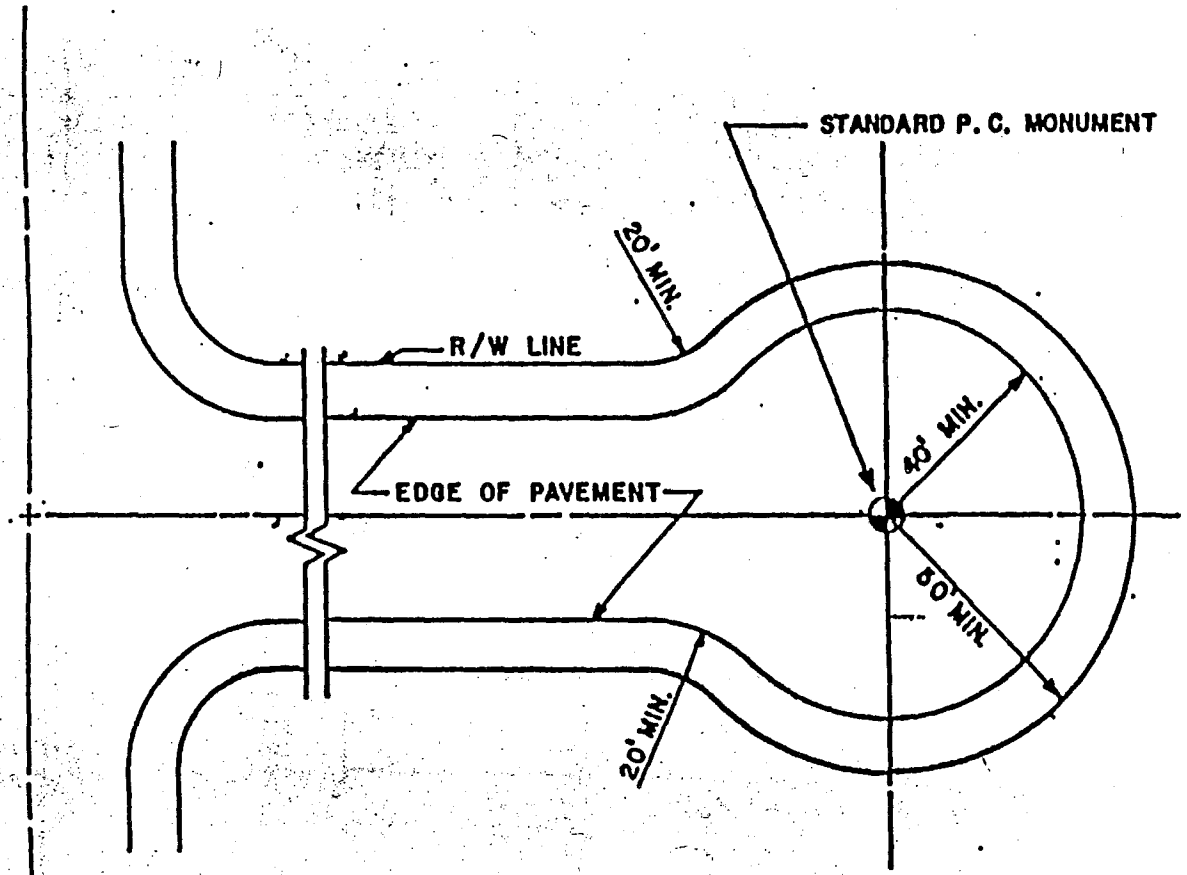
BACKFILL COMPACTION LEGEND

(1) BACKFILL MATERIAL PLACED IN 6" LIFTS AND COMPACTED TO 95% MAXIMUM DENSITY.

(2) BACKFILL MATERIAL PLACED IN 4" LIFTS AND COMPACTED TO 95% MAXIMUM DENSITY.

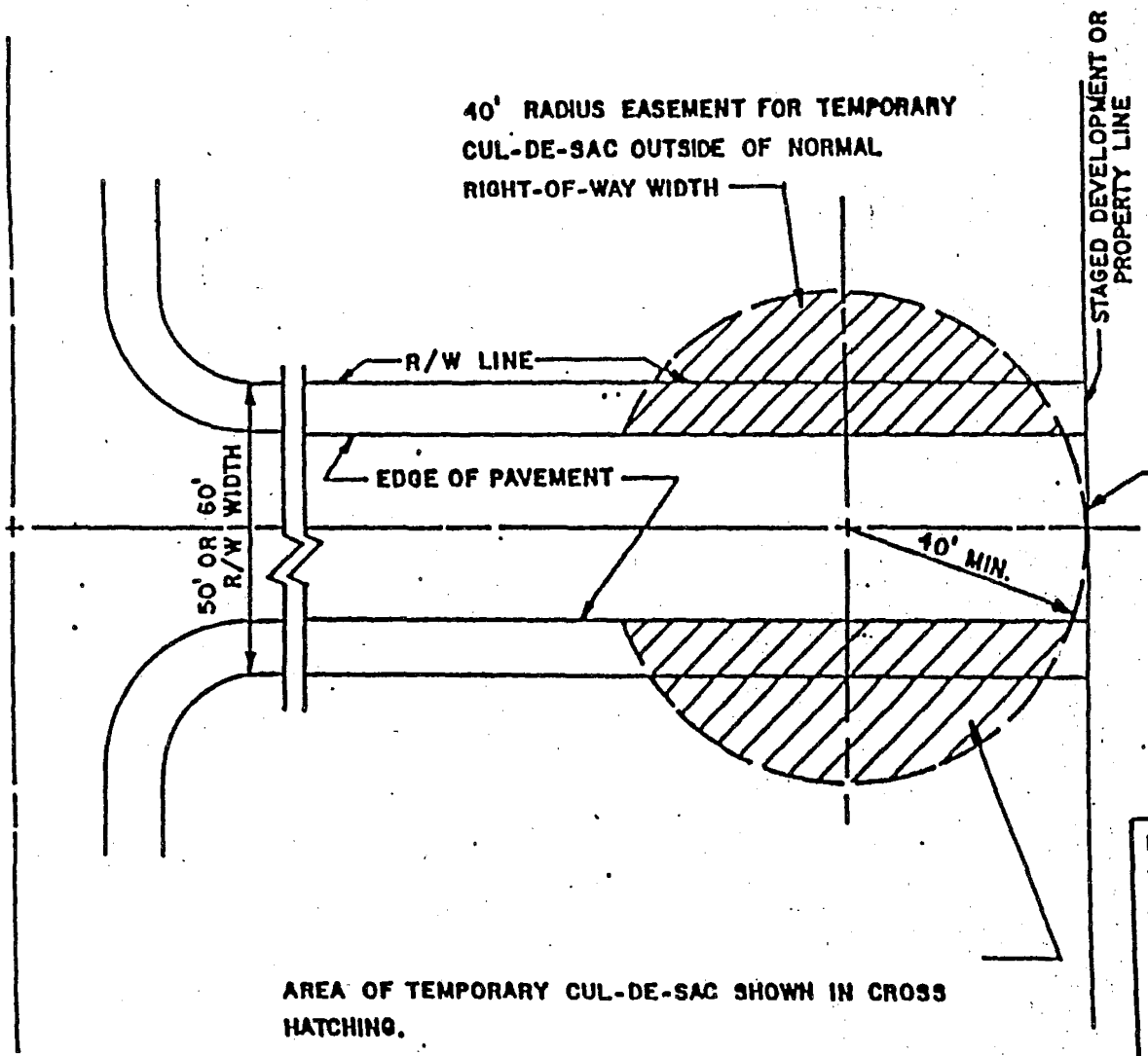
5 91	ORIGINAL DRAWING		K
	REVISIONS	APPROVED	RAWN

U. UTILITY PATCH DETAIL
FOR ALL UTILITY ROAD CUTS



4/8/91	DELETED ROADWAY SECTION DETAILS		JAK
3/1	ORIGINAL DRAWING		CLT
DATE	REVISION	APPROVED	DRAWN

v. PERMANENT CUL-DE-SAC



PAVEMENT STRUCTURE OF SHADED AREA OF CUL-DE-SAC SHALL BE IDENTICAL TO ROAD PAVEMENT STRUCTURE. SLOPE SHADED SECTIONS A MINIMUM OF 2% TOWARD ROAD. - PAVEMENT TO COME LEVEL WITH BACK OF CURB.

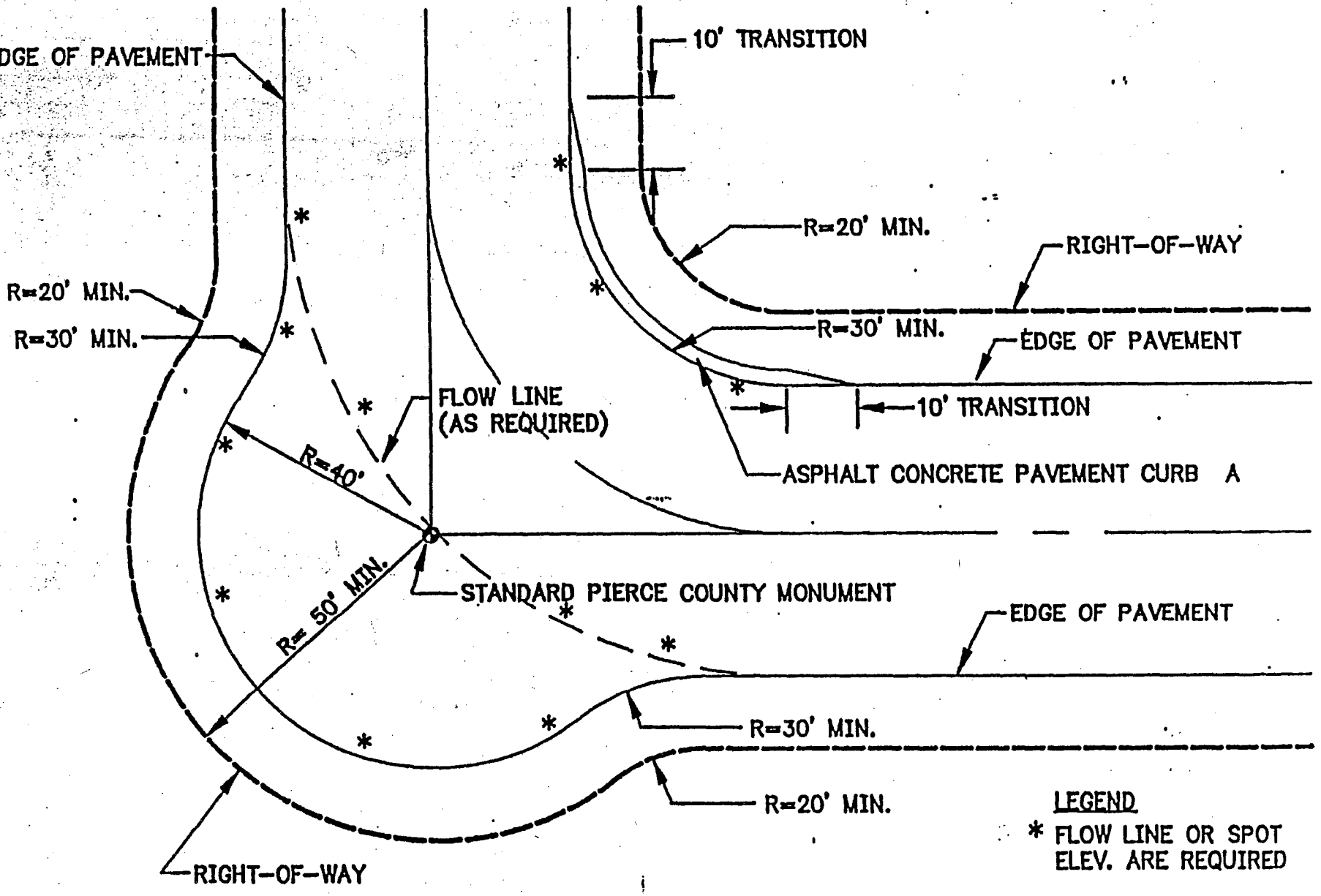
AREA OF TEMPORARY CUL-DE-SAC SHOWN IN CROSS HATCHING.

NOTE:
TEMPORARY CUL-DE-SAC OUTSIDE OF STANDARD RIGHT-OF-WAY TO BE AUTOMATICALLY VACATED WHEN ROAD IS EXTENDED. SLOPE EASEMENT RIGHTS NOT APPLICABLE TO TEMPORARY CUL-DE-SAC. (TO BE SHOWN ON FINAL PLAT MAP)

DO NOT SCALE

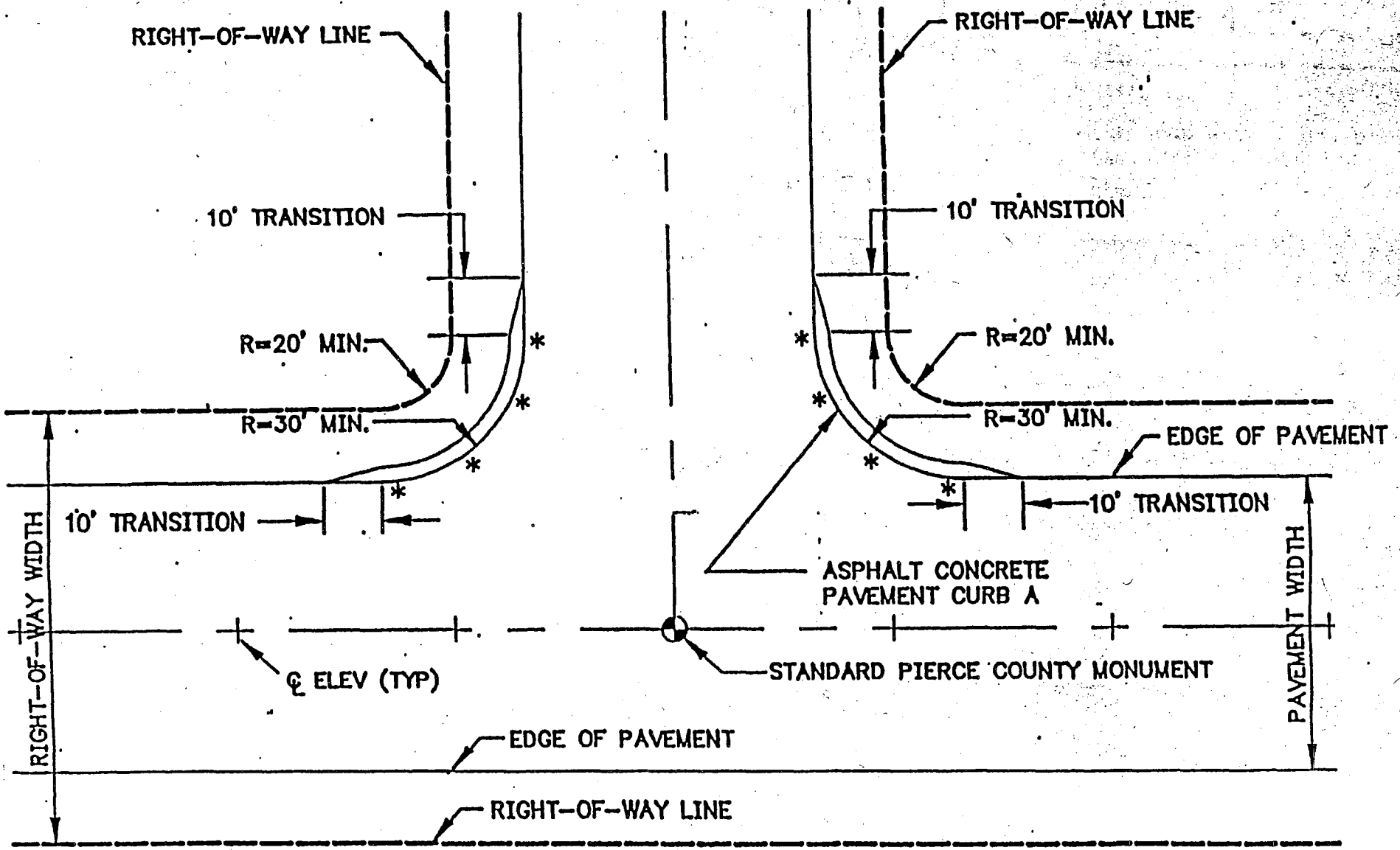
	ORIGINAL DRAWING		KLT
	REVISIONS	APPROVED	DRAWN

W. TEMPORARY CUL-DE-SAC



7 22 92	REVISED CUL-DE-SAC RADIUS		KWB
4 22 91	ORIGINAL DRAWING		JAK
E	REVISION	APPROVE	RAWN

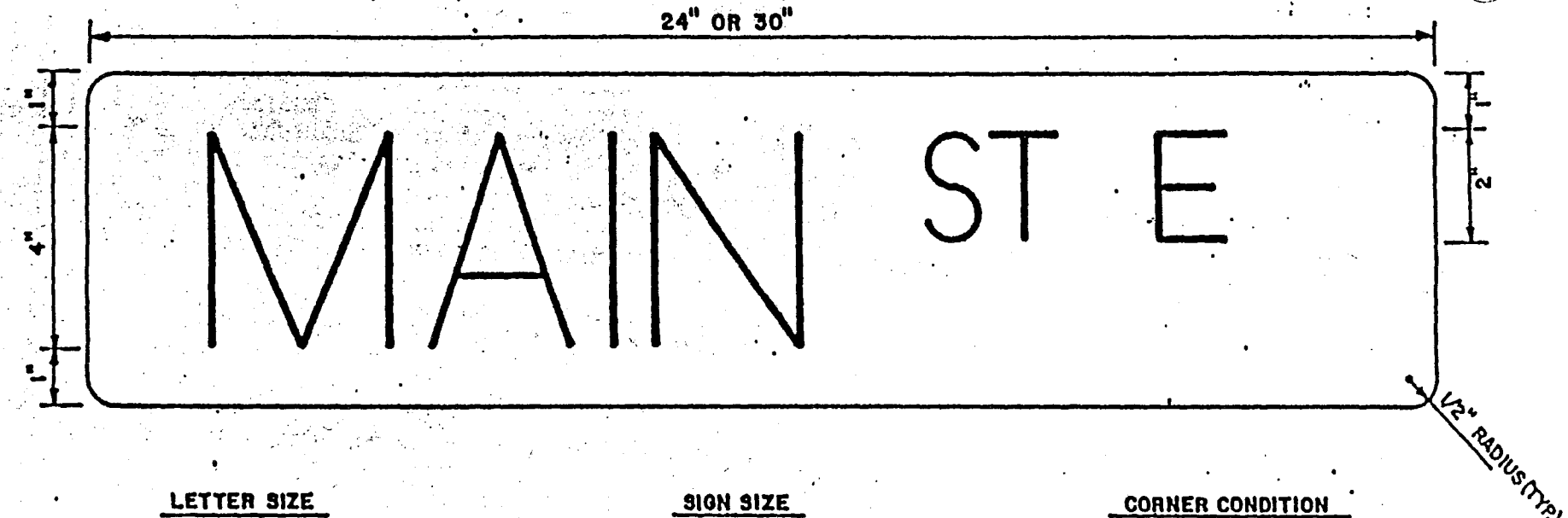
x. RIGHT ANGLE "L" INTERSECTION



LEGEND
* FLOW LINE OR SPOT ELEV. ARE REQUIRED.

	ORIGINAL DRAWING		
DATE	REVISION	APPROVED	DRAWN

Y. "T" INTERSECTION DETAIL

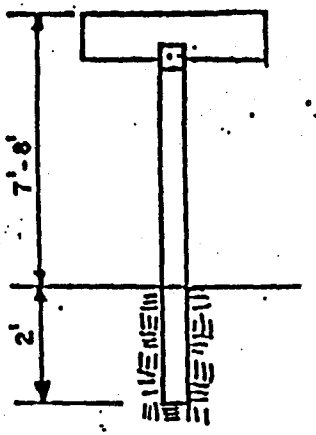


LETTER SIZE
4" ROAD NAME
2" DIRECTIONAL DESIGNATION

SIGN SIZE
24" OR 30" x 6"

CORNER CONDITION
1/2" RADIUS

NOTES:
1. STANDARD LETTER SERIES "B" OR "C"

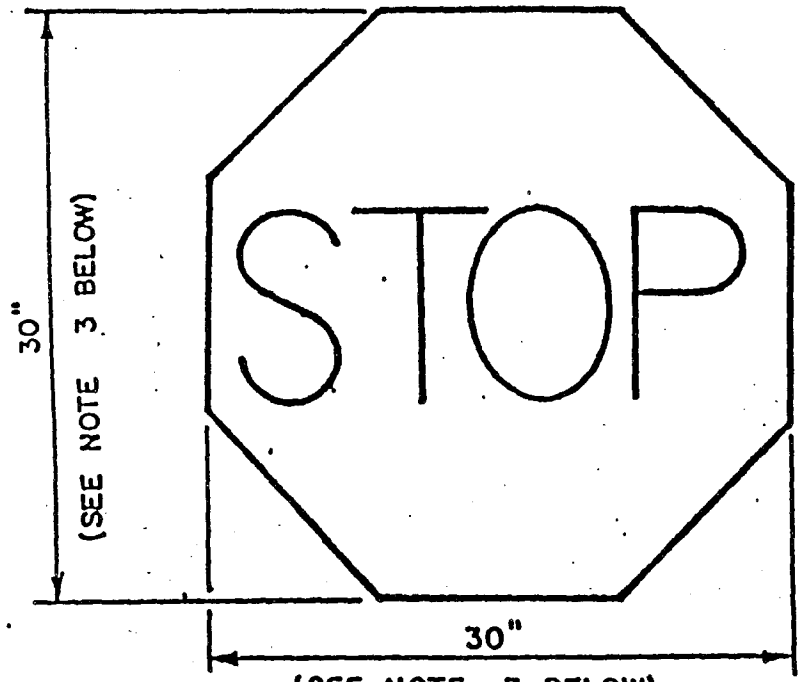


SIGN INSTALLATION

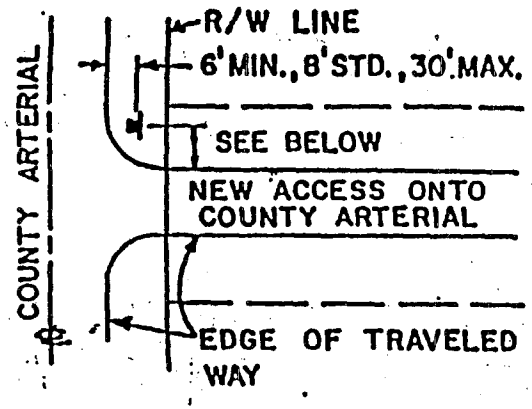
DO NOT SCALE

7/16/85	ADD SIGN DETAIL		CBP
4/03/1	ORIGINAL DRAWING		T
DATE	REVISIONS	APPROVED	...WN

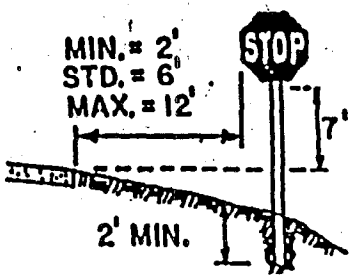
2. STREET NAME SIGN
D3-1 DETAIL



VARIATION FROM THIS LOCATION BY WRITTEN APPROVAL OF THE COUNTY ONLY



SIGN PLACEMENT



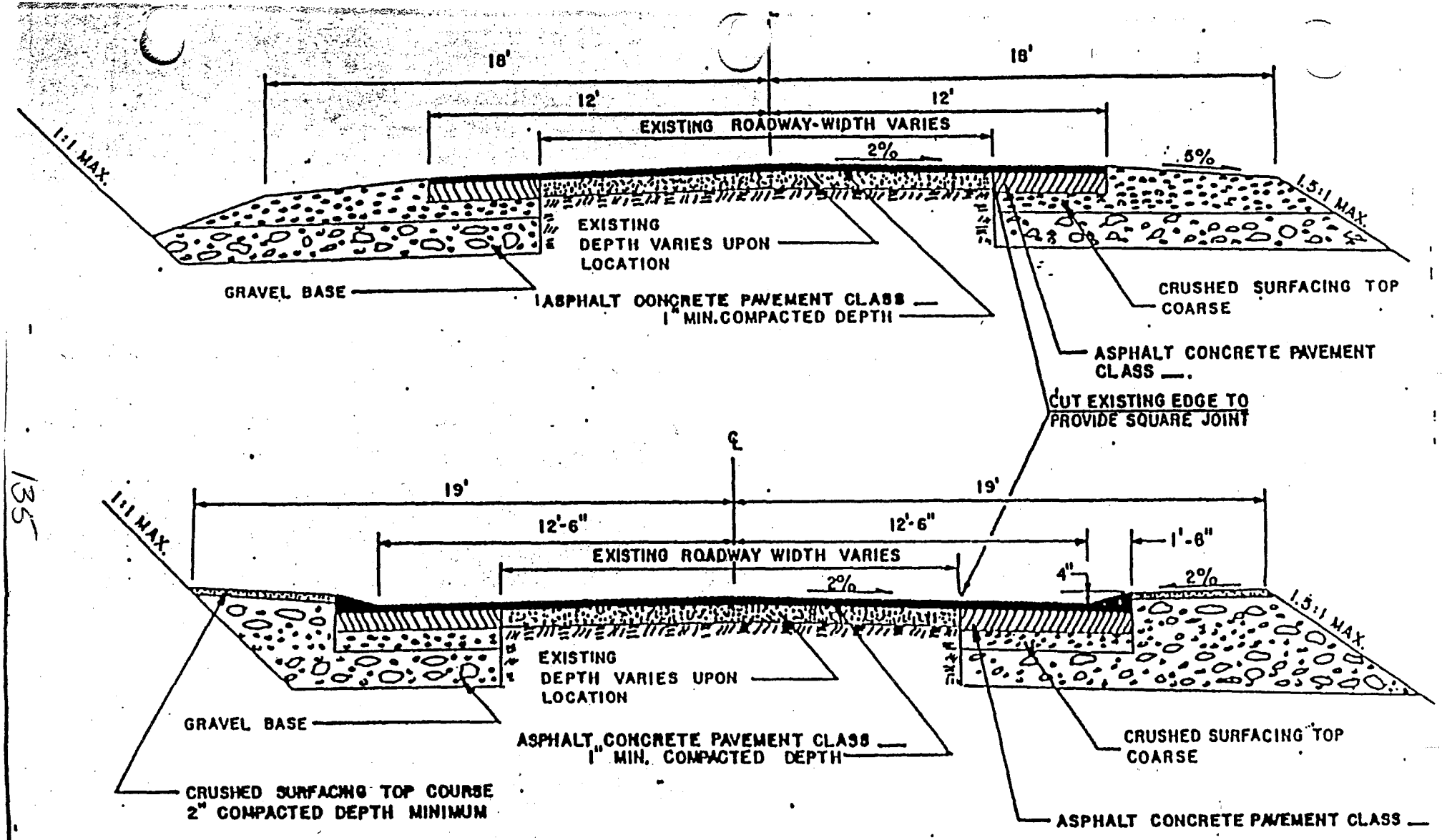
SIGN INSTALLATION

1. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE LATEST W.S.D.O.T. STANDARD PLANS AND SPECIFICATIONS.
2. ALL CLEARING WITHIN COUNTY RIGHT OF WAY TO MAKE THE SIGN VISIBLE IS THE RESPONSIBILITY OF THE APPLICANT. APPROVED ROAD CONSTRUCTION PLANS OR A PERMIT FROM THE COUNTY IS NECESSARY BEFORE WORK COMMENCES.
3. IF THE NEW ACCESS ROAD INTERSECTING THE ARTERIAL IS A DEAD END ROAD, THE SIZE OF THE STOP SIGN SHALL BE 24" X 24".
4. THE STOP SIGN SHALL BE VISIBLE FROM A DISTANCE OF AT LEAST 200' BACK ON THE APPROACHING ROADWAY, WHEN THE LEGAL SPEED LIMIT IS 25 M.P.H.
5. SHEET ALUMINUM SIGNS SHALL BE CONSTRUCTED OF ALLOY 6061-T6, 5052-H36 OR 5052-H38. THICKNESS SHALL BE .080" OR 14 GAGE.
6. SIGN FACE MATERIAL SHALL BE MADE OF RED REFLECTIVE SHEETING WITH WHITE REFLECTIVE LETTERING, USING THE LAYOUT CONSISTENT WITH THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
7. SIGN POSTS SHALL BE WESTERN CEDAR, TREATED DOUGLAS FIR OR TREATED HEM-FIR WHICH ARE 4" X 4" NOMINAL DIMENSION.
8. ALL HARDWARE AND FASTENERS SHALL BE GALVANIZED STEEL.

11-7-85	ORIGINAL DRAWING		A.G.
DATE	REVISIONS	APPROVE	DRAWN

DO NOT SCALE

AA. STOP SIGN DETAIL

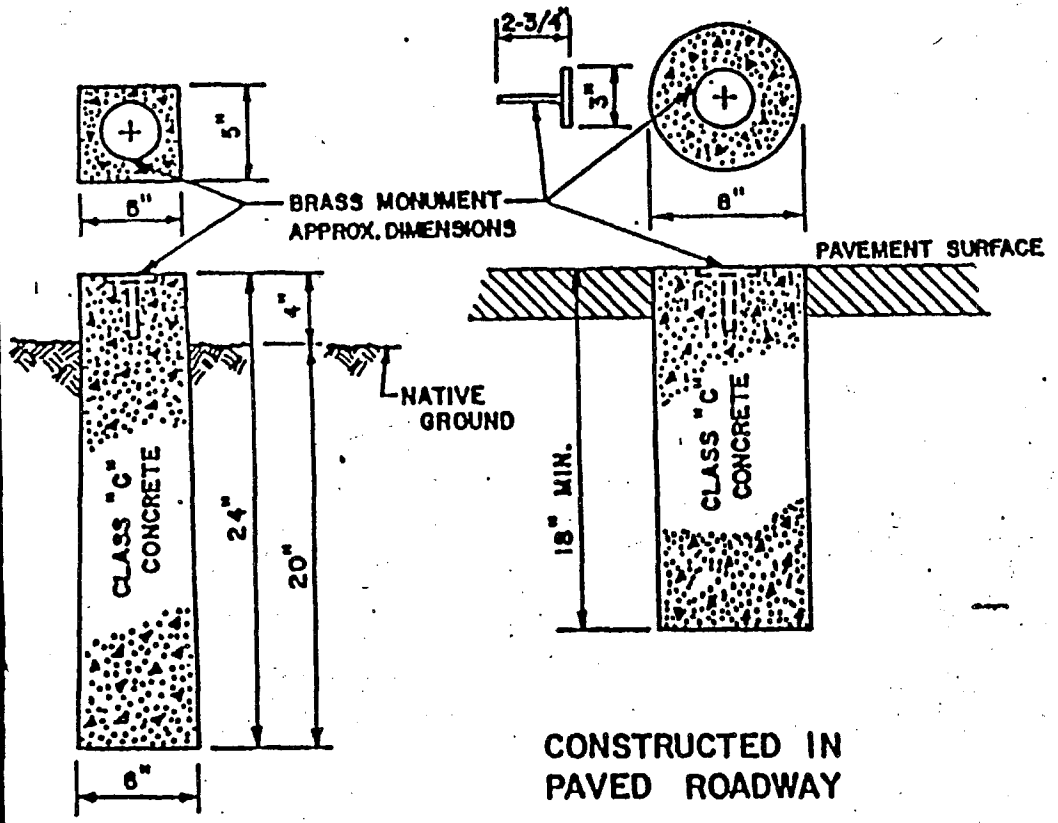


135

DATE	REVISIONS	APPROVED	DRAWN
4/8/91	REVISED SUBGRADE AND SURFACING DEPTHS		JAK
7/5/85	GENERAL REVISIONS		CBP
3 23 84	ORIGINAL DRAWING		JWG

BB.
WIDENING AND OVERLAYING DETAIL

EXHIBIT A TO ORDINANCE ...



PRECAST MONUMENT
FOR OFF-ROAD USE

CONSTRUCTED IN
PAVED ROADWAY

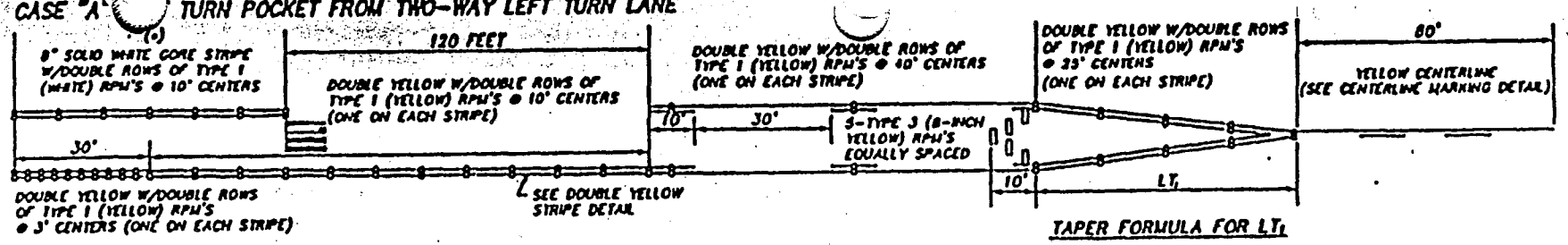
NOTES:

1. THE 24" ENCASEMENTS ARE PRECAST AND USED IN LOCATIONS OTHER THAN ASPHALTIC CONCRETE ROAD PAVEMENTS.
2. THE HOLE FOR THE MONUMENT SHALL BE CUT AFTER THE NEW PAVEMENT HAS BEEN CONSTRUCTED, EXCAVATION SHALL BE PREPARED IN A WORKMANLIKE MANNER TO THE DIMENSIONS SHOWN HEREON. THE UPPER 3" OF THE MONUMENT ENCASEMENT SHALL BE SHAPED TO A TRUE DIAMETER OF 8". CLASS "C" CONCRETE SHALL BE USED FOR ENCASEMENT. THE BRONZE MONUMENT WILL BE SET SIMULTANEOUSLY WITH THE POURING OF CONCRETE IN THE ENCASEMENT.

3/	ORIGINAL DRAWING		LT
DATE	REVISIONS	APPROVED	DRAWN

CC. STANDARD MONUMENTS

CASE "A" TURN POCKET FROM TWO-WAY LEFT TURN LANE



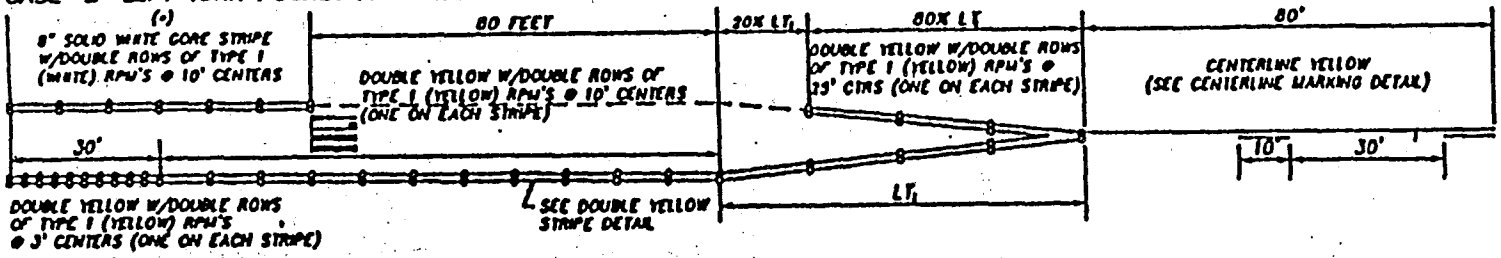
TAPER FORMULA FOR LT_1

$LT_1 = WS$ (45 MPH OR MORE)

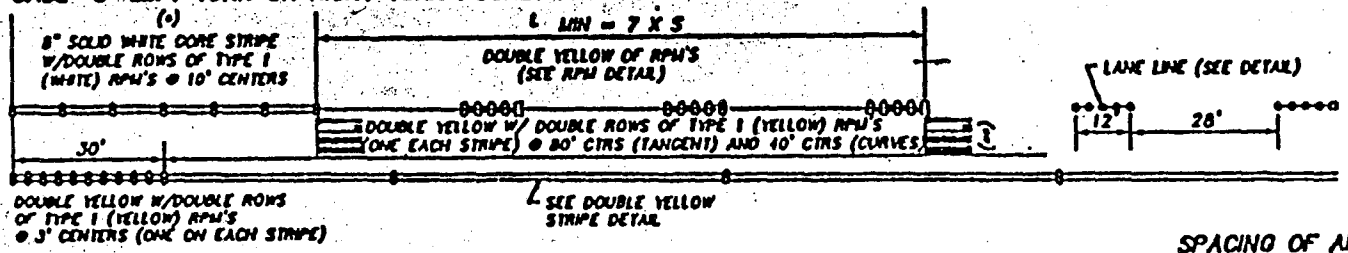
$LT_1 = \frac{WS^2}{60}$ (0 TO 40 MPH)

S = SPEED LIMIT
L = LENGTH IN FEET
W = OFFSET IN FEET
LT = LENGTH OF TAPER

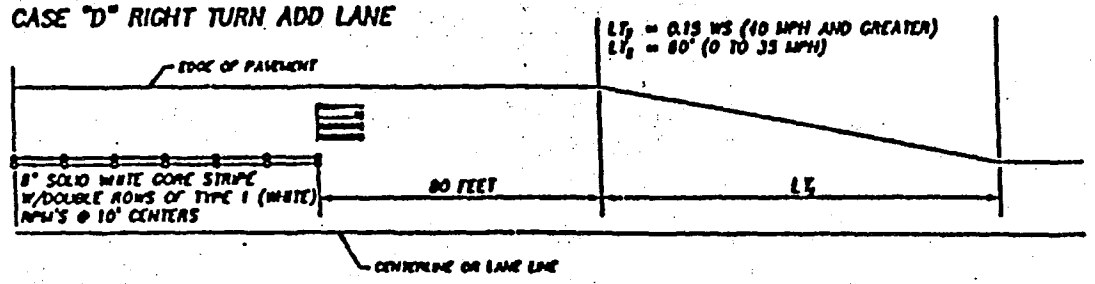
CASE "B" LEFT TURN POCKET FROM TAPER SECTION



CASE "C" LEFT TURN OR RIGHT TURN POCKET FROM TWO THRU LANES



CASE "D" RIGHT TURN ADD LANE



SPACING OF ARROW MARKINGS FOR LEFT/RIGHT TURN POCKETS

SPACING (% OF POCKET LENGTH) ← DIRECTION OF TRAFFIC	POCKET LENGTH MORE THAN	POCKET LENGTH BUT LESS THAN	USE
100%	60 FEET	120 FEET	1 ARROW
40% 100%	120 FEET	250 FEET	2 ARROWS
20% 60% 100%	250 FEET	350 FEET	3 ARROWS
15% 45% 75% 100%	350 FEET	450 FEET	4 ARROWS

• TURN LANE STORAGE LENGTH TO BE DETERMINED BY THE ENGINEER
ABSOLUTE MIN. - - - 60 FEET
DESIRABLE MIN. - - - 100 FEET
DESIRABLE - - - - - 125 FEET TO 150+ FEET

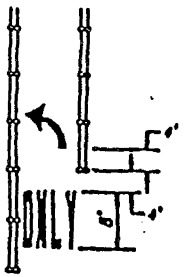
•• INSTALL ONE ARROW AND "ONLY" AT BEGINNING OF 8" CORE SKIP LINE.

••• INSTALL ONE SIGN AT 40% WHEN "L" IS MORE THAN 350 FEET.

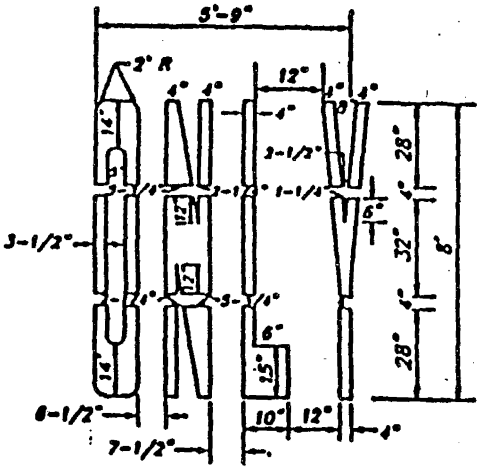
DA:	REVISION	APPROVED	1WN

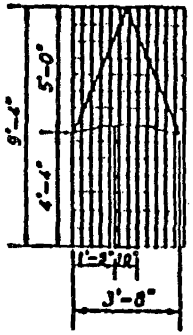
DD.

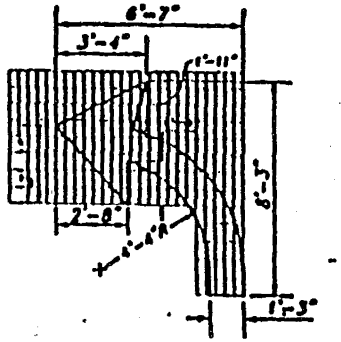
PAVEMENT MARKING DETAILS
SHEET 1 OF 4

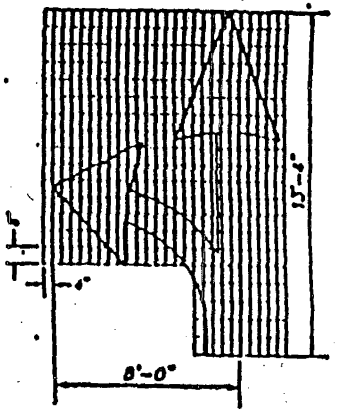


ARROW/ONLY PLACEMENT AT BEGINNING OF GORE STRIPE

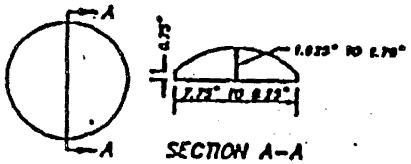








PAINTED TRAFFIC ARROW DETAILS

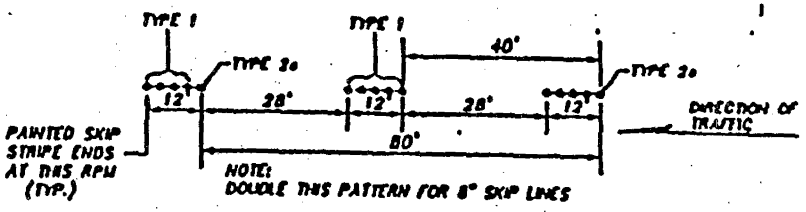


PLASTIC TRAFFIC BUTTON TYPE "A"

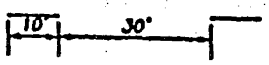
TYPE 1	NON-REFLECTIVE	YELLOW OR WHITE
TYPE 2d	REFLECTIVE FACE	YELLOW AND YELLOW
TYPE 2o	REFLECTIVE FACE	WHITE-ONE SIDE ONLY
TYPE 3	NON-REFLECTIVE*	YELLOW* 8" LENGTH

* UNLESS OTHERWISE SPECIFIED

RAISED PAVEMENT MARKERS (RPM'S)

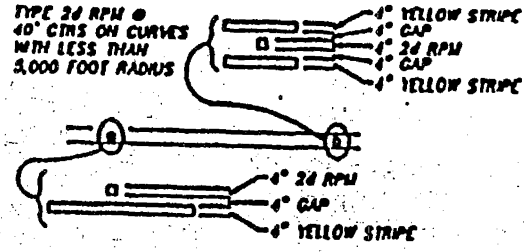


RPM LAYOUT FOR PAINTED LANE LINES (TANGENT SECTION)



SKIP STRIPE PATTERN FOR CENTERLINE AND LANE LINES

DOUBLE YELLOW STRIPE DETAIL (FOR CHANNELIZATION)



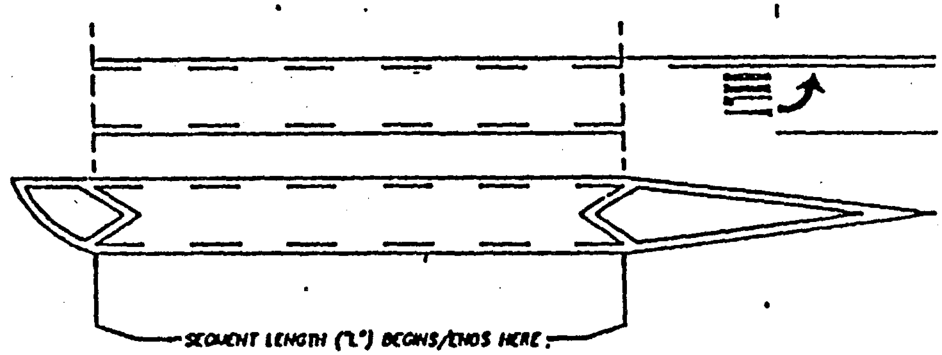
PAINT AND RPM LAYOUT FOR CENTERLINE OF MAJOR AND SECONDARY ARTERIALS WITH TWO LANE TWO WAY TRAFFIC.

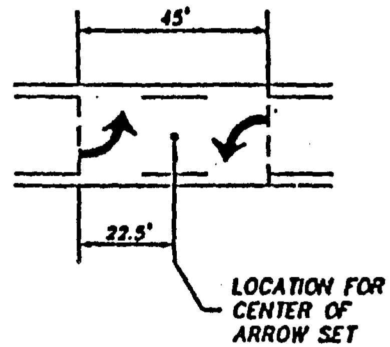
REVISION	APPROVED DRAWING

DD.
PAVEMENT MARKING DETAILS
SHEET 2 OF

SEGMENT LENGTH "L" FROM: TO:	# OF ARROW SETS	LOCATION OF CENTER OF SET
0' – 100'	0	
101' – 300'	1	0.5L 0.5L
301' – 500'	2	75' 75'
501' – 850'	3	75' 0.5L 75'
851' – 1200'	4	75' 75'
1201' – 1750'	5	• SPACE BALANCE OF SETS EVENLY OVER REMAINDER OF SEGMENT.
OVER 1750'	$\frac{L-100}{300}$	ROUND TO NEAREST WHOLE NUMBER

END TREATMENT EXAMPLES:





TWO-WAY LEFT TURN LANE ARROW PLACEMENT

DA[illegible]	REVISION	APPROVED	[illegible]WN

DD.
PAVEMENT MARKING DETAILS
SHEET 3 OF 4

NOTES

1. General. All pavement markings shall conform to the requirements of the Manual On Uniform Traffic Control Devices (MUTCD), and to the Washington State Department of Transportation Standard Specifications for Road, Bridge, and Municipal Construction, as adopted by the County. All striping, arrows, onlys, crosswalks, and stop bars shall be painted.

2. Center lines. Centerline striping shall be used on all arterials and on all undivided pavements of three or more lanes. Type 2d Raised Pavement Markers (RPM's) shall be installed along centerlines of two-lane major and secondary arterials, spaced at 80 foot intervals on tangents and 40 foot intervals on horizontal curves having radii of less than 5,000 feet, and centered between skip stripes. For centerlines of multi-lane roads, double rows of Type 1, yellow RPM's (one on each stripe) shall be spaced at 80 foot intervals on tangents and 40 foot intervals on horizontal curves having radii of less than 5,000 feet.

3. Lane lines. Lane lines on multi-lane roads shall be delineated by painted skip stripes each with five RPM's, including the use of Type 2e RPM's spaced at 80 foot intervals on tangents and 40 foot intervals on horizontal curves having radii of less than 5,000 feet.

4. Edge lines. Edge lines consisting of a 4 inch solid white line shall be required under the following circumstances, and shall be carried through private driveways and private road approaches:

   (a) On all major arterials, except when continuous raised edge, curb or curb and gutter exists along the arterial, when 12 foot lane widths can be provided.

   (b) On all secondary arterials which have a posted speed limit greater than 35 mph, except when continuous raised edge, curb or curb and gutter exists along the arterial, when 12 foot lane widths can be provided.

   (c) On all pavement width transitions.

   (d) On all major/secondary arterials where it is desirable to reduce driving on paved shoulders.

5. Stop bars. 18-inch stop bars shall be used under the following circumstances and shall be carried across all approach lanes which are required to stop:

   (a) On all approaches to signalized intersections where marked crosswalks do not exist.

   (b) On all approaches to multi-way Stop intersections where marked crosswalks do not exist.

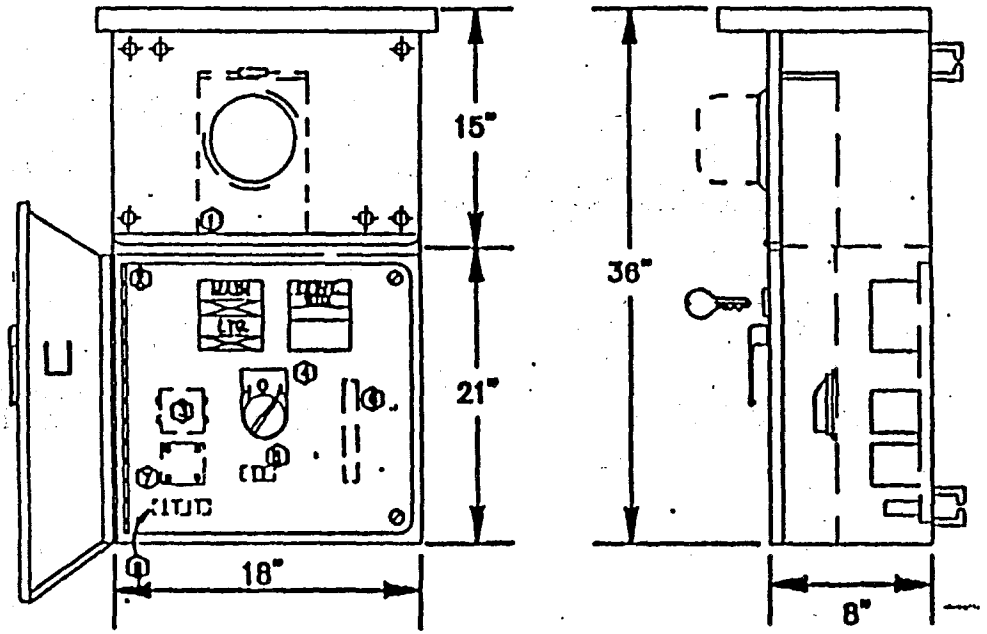
   (c) On all approaches where channelization exists and marked crosswalks do not exist.

6. Removals. All existing pavement markings that are in conflict with new pavement markings shall be removed.

	REVISION	APPROVE	RAWN

DD.
PAVEMENT MARKING DETAILS
SHEET 4 OF 4

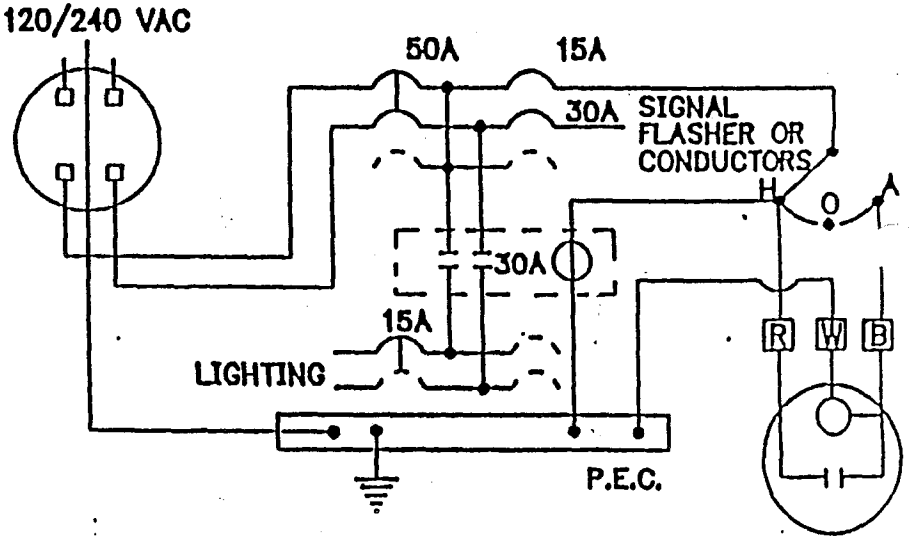
SIGN[illegible]ED & ILLUMINATED
INTER[illegible]CTION
SERVICE CABINET & LOAD CENTER
MODIFIED TYPE "B" SERVICE



ITEM	COMPONENT SCHEDULE
1	METERBASE, 4 JAW, 1ø, 3W., 600 V., 125A., LEVER BY-PASS MILBANK # U1520 PER CITY OF TACOMA
2	PANEL BOARD, 125A, 120/240 VAC., 1ø 3W., WESTINGHOUSE NQB MAIN 50A 2P CONTROL 15A 1P SIGNAL 30A 1P LIGHTING 15A 1P
3	CONTACTOR, 30,SP., 600V., 120V. COIL, 120VA INRUSH,60 Hz, GE #3056
4	CONTROL SWITCH, 10A., 5PDT "HAND-OFF-AUTO" NAMEPLATE
5	3-POINT TERMINAL BLOCK FOR CONNECTION TO REMOTE PHOTO CELL
6	COPPER NEUTRAL
7	SOLID STATE NEMA SIGNAL FLASHER PER W.S.D.O.T. STANDARD SPECS 4 PIN TYPE
8	TERMINAL BLOCK FOR FIVE #12AWG SIGNAL CONDUCTORS PER W.S.D.O.T. STANDARD SPECS

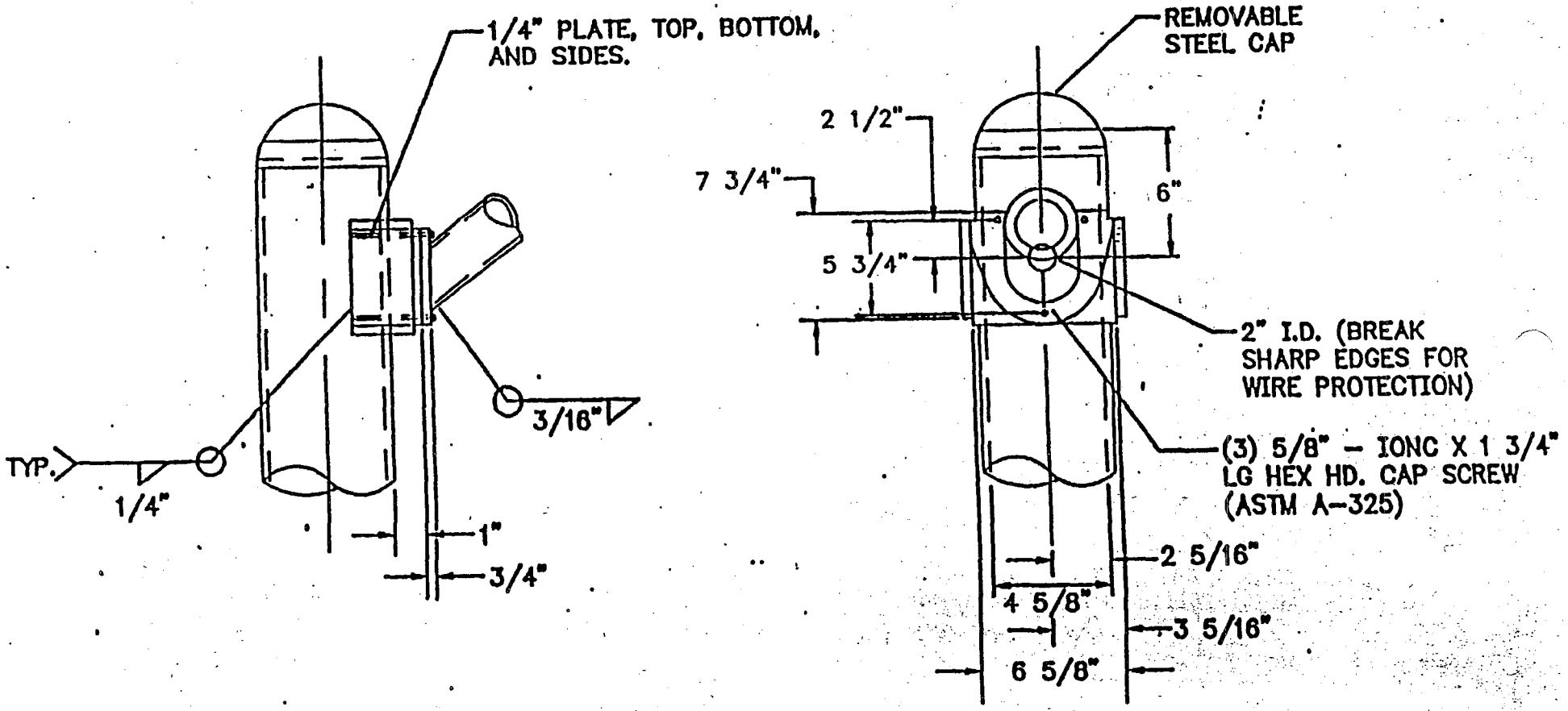
CABINET-NEMA 3R-POLE MOUNTED NO. K.O.S.
OVERHEAD FEED, #14 GAUGE STEEL HOT DIPPED GALVANIZED
STAINLESS HINGE, SINGLE POINT LATCH
BEST CX-3 LOCK, CLOSED CELL NEOPRENE GASKET
HINGED DEADFRONT W/ 1/4 TURN FASTENERS

120 VAC 60 HZ, WILL HANDLE 1 AMP INRUSH
ALL COMPONENTS ARE U.L. LISTED
OR CSA APPROVE.
SEE SPECIAL PROVISIONS FOR NUMBER OF UNITS
AND ANY SPECIOL FEATURES REQ'D.



4 22	ORIGINAL DRAWING		
DAT[illegible]	REVISIONS	APPROVED	L[illegible]AWN

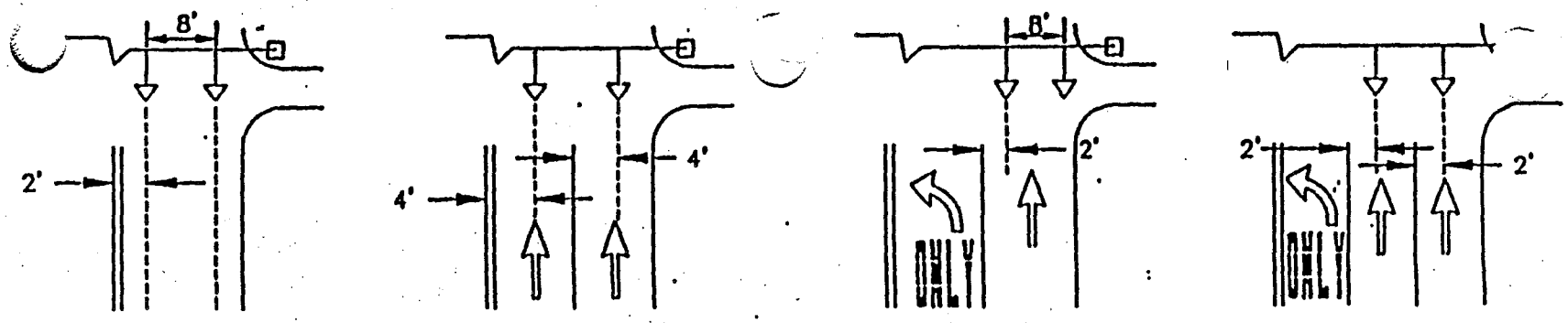
EE. SIGNAL/FLASHER
SERVICE PANEL [illegible]ETAIL



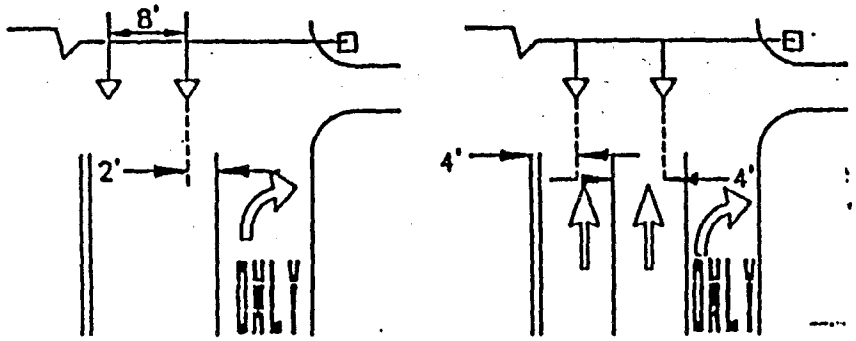
LUMINAIRE ARM CONNECTION DETAIL

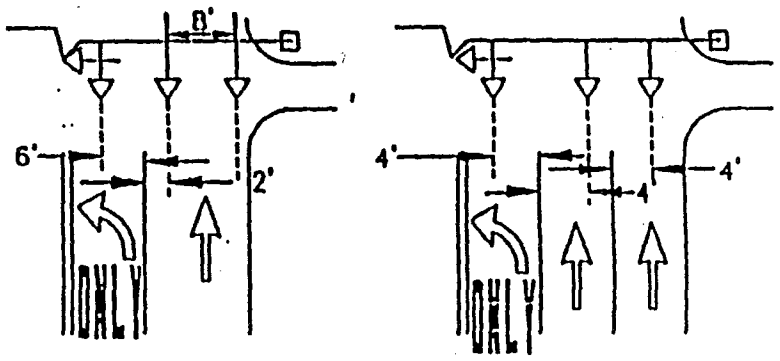
DATE	REVISIONS	APPROVED	DRAWN
2 91	ORIGINAL DRAWING		JAK

FF. TRAFFIC SIGNAL STANDARD DETAILS

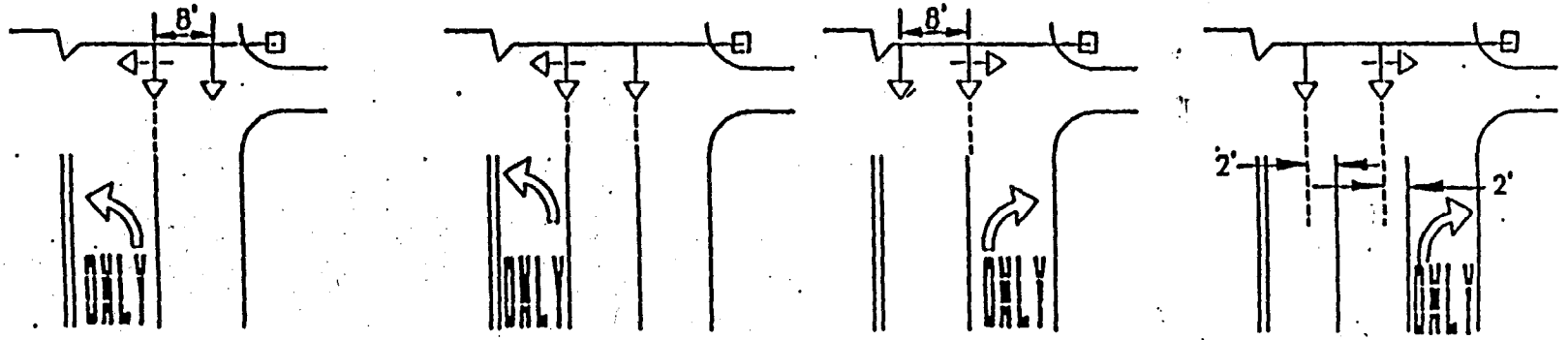


PERMISSIVE TURNS





PROTECTED TURNS



PROTECTED / PERMISSIVE TURNS

(IF NO TURN LANE EXIST, USE ALIGNMENT FOR PERMISIVE TURNS)

5 91	ORIGINAL DRAWING		JAK
L E	REVISION	APPROVE	RAWN

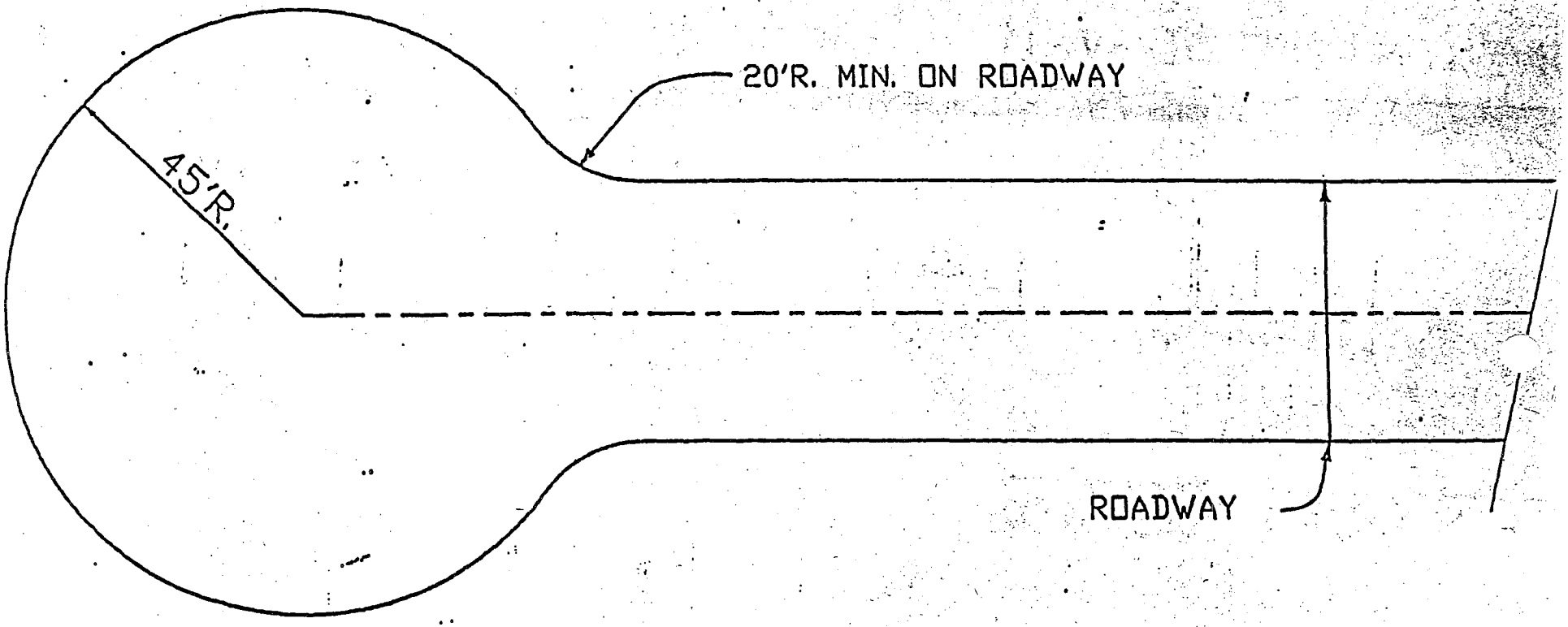
GG.

TRAFFIC SIGNAL HEAD

ALIGNMENT DETAIL

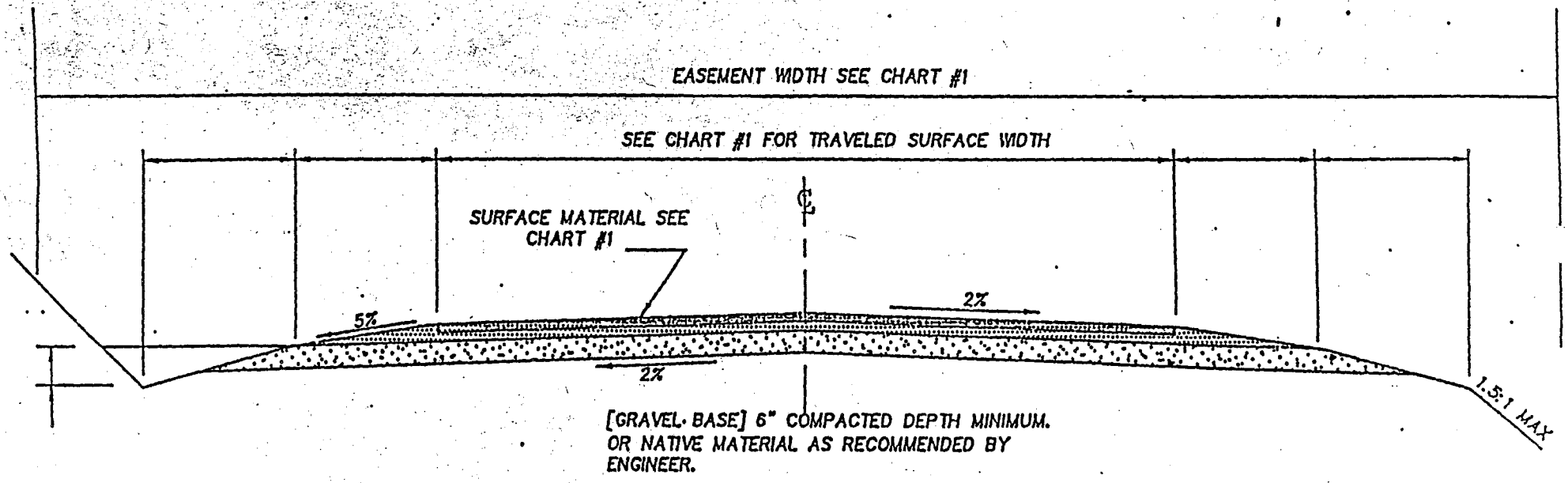
143

129



DEAD END CUL-DE-SAC

DESIGN CRITERIA & CROSS SECTIONS



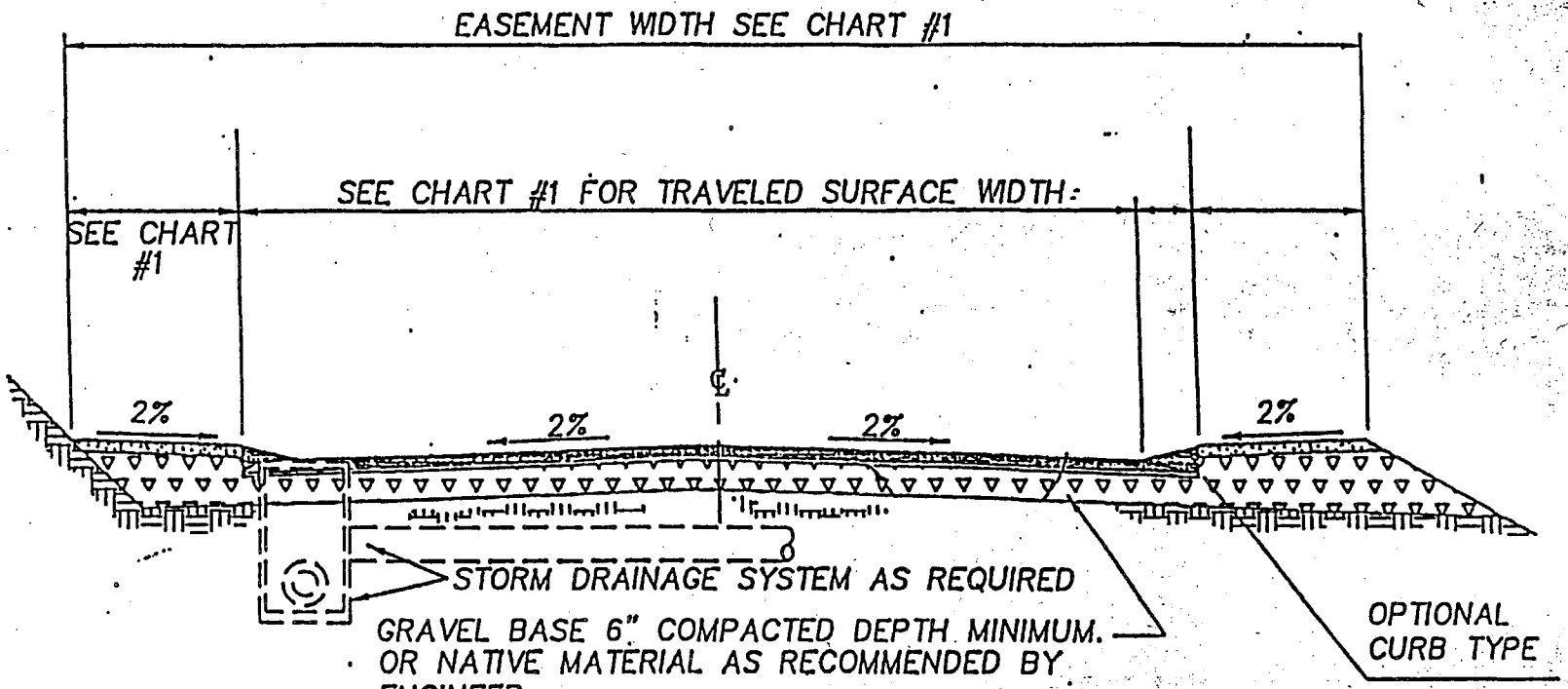
OPTION "A"

N.T.S.

SH1

EXHIBIT "A" TO ORDINANCE NO. 91-46S

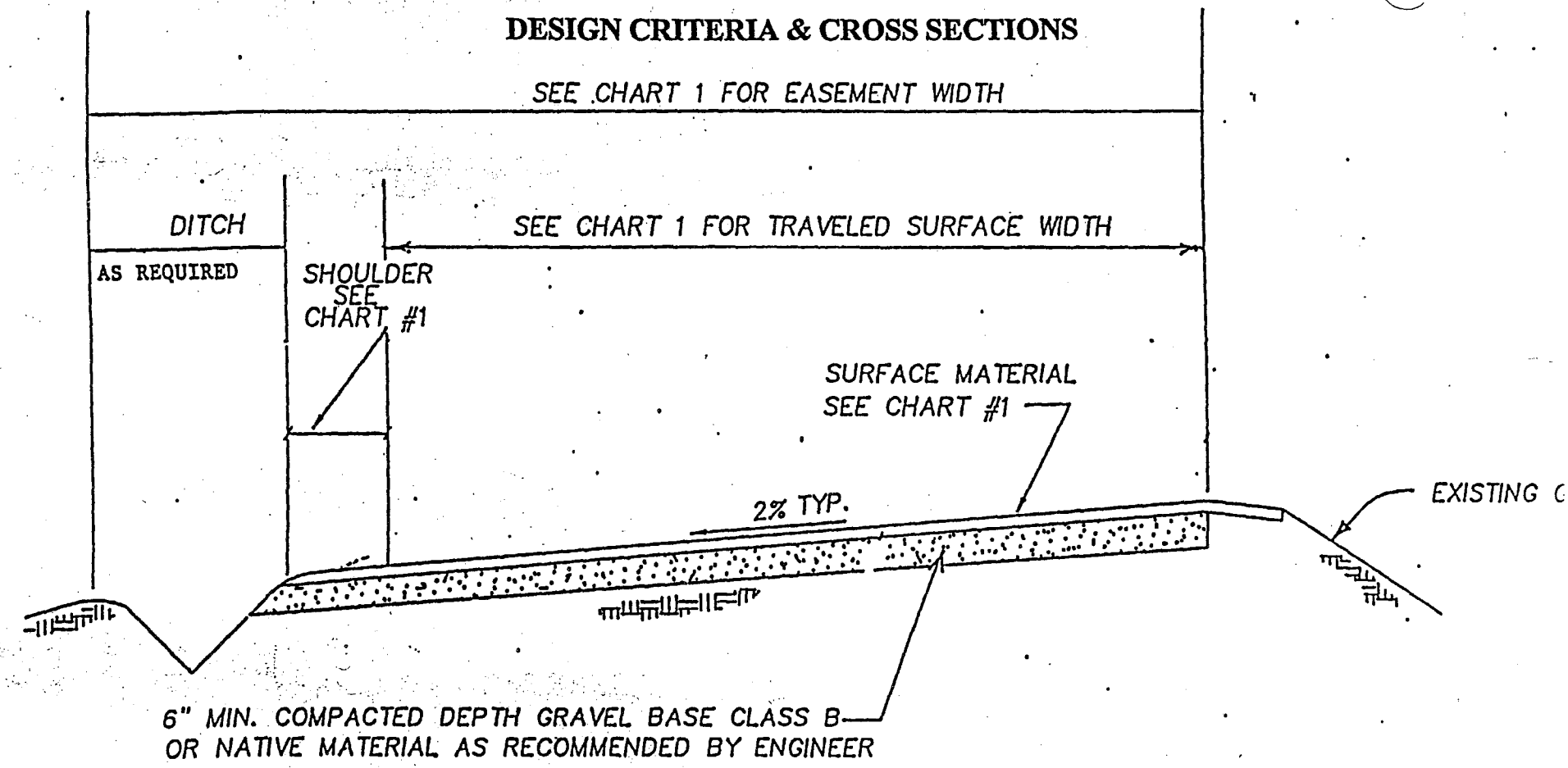
DESIGN CRITERIA & CROSS SECTIONS



OPTION "B"

N.T.S.

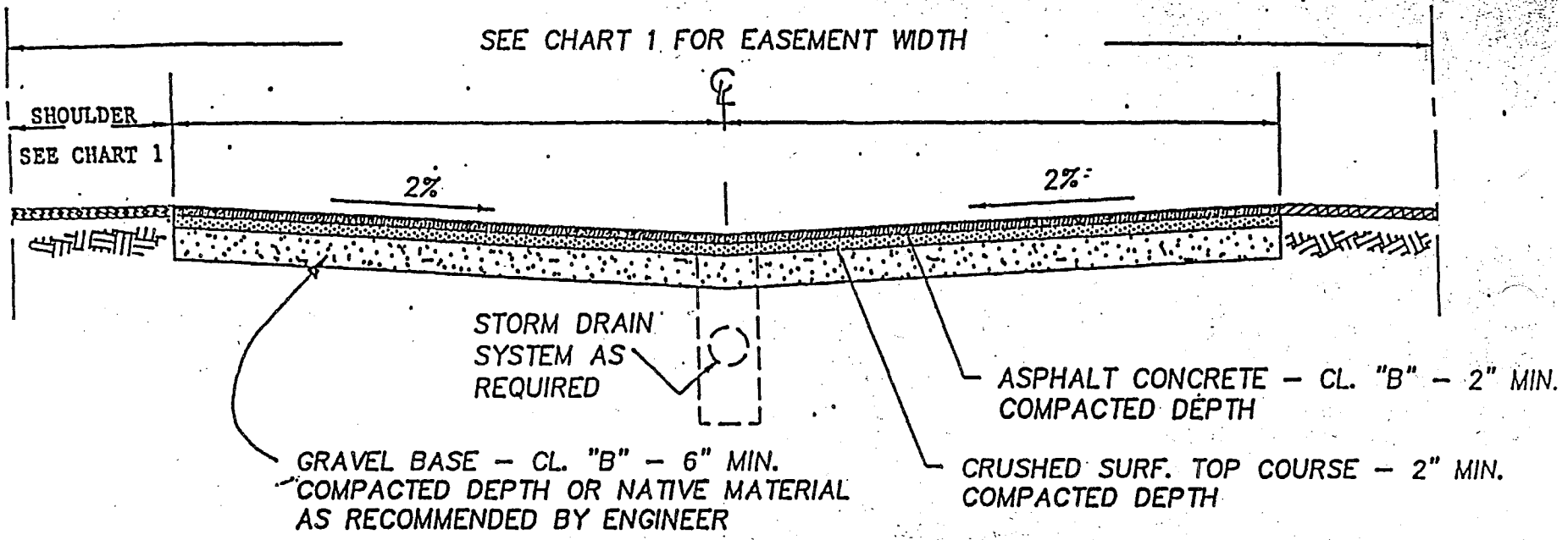
DESIGN CRITERIA & CROSS SECTIONS



OPTION "C"

N.T.S.

DESIGN CRITERIA & CROSS SECTIONS



OPTION "D"

N.T.S.

DESIGN CRITERIA & CROSS SECTIONS

NOTES:

1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE LATEST W.S.D.O.T. STANDARD PLANS AND SPECIFICATIONS
2. SIGN MUST BE VISIBLE FROM BOTH THE COUNTY ROAD AND THE PRIVATE EASEMENT ROAD
3. ALL CLEARING WITHIN COUNTY RIGHT-OF-WAY TO MAKE THE SIGN VISIBLE IS THE RESPONSIBILITY OF THE APPLICANT

SIGN MATERIAL REQUIREMENTS

1. SHEET ALUMINUM SIGNS SHALL BE CONSTRUCTED OF ALLOY 6061-T6, 5052-H36, OR 5052-H38. THICKNESS SHALL BE .080" OR 14 GAGE.
2. SIGN FACE MATERIAL SHALL BE MADE OF GREEN REFLECTIVE SHEETING WITH 2", 3", AND 4" WHITE REFLECTIVE LETTERING, SERIES B, C, OR D USING THE LAYOUT CONTAINED IN ORDINANCE 84-86.

SIGN POST REQUIREMENTS

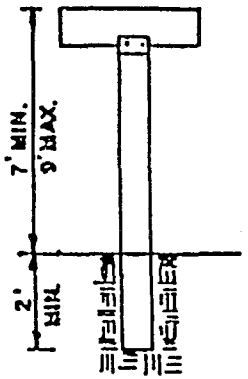
1. SIGN POSTS SHALL BE WESTERN CEDAR, TREATED DOUGLAS FIR OR TREATED HEM-FIR WHICH ARE 4" x 4" NOMINAL DIMENSION.

HARDWARE

1. SIGN BRACKET SHALL BE DIE CAST HIGH STRENGTH ALUMINUM ALLOY (TENSILE STRENGTH 40,000 PSI) DESIGNED FOR MOUNTING ON TOP OF THE 4" x 4" WOODEN POST AND SUITABLE FOR FLAT BLADE SIGN BLANKS. SLOTS FOR SIGNS SHALL HAVE A NOMINAL LENGTH OF 3" WITH TWO 5/16" ZINC PLATED STANDARD ALLEN WRENCH SET SCREWS.
2. ALL OTHER HARDWARE AND FASTENERS SHALL BE GALVANIZED STEEL.

SIGN SIZE

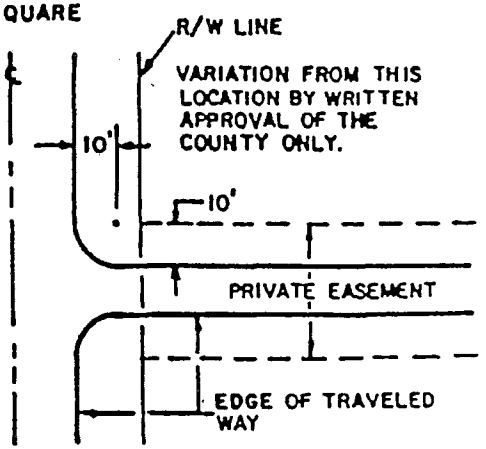
VARIABLE (18" MIN) x 8"



SIGN INSTALLATION

CORNER CONDITION

SQUARE

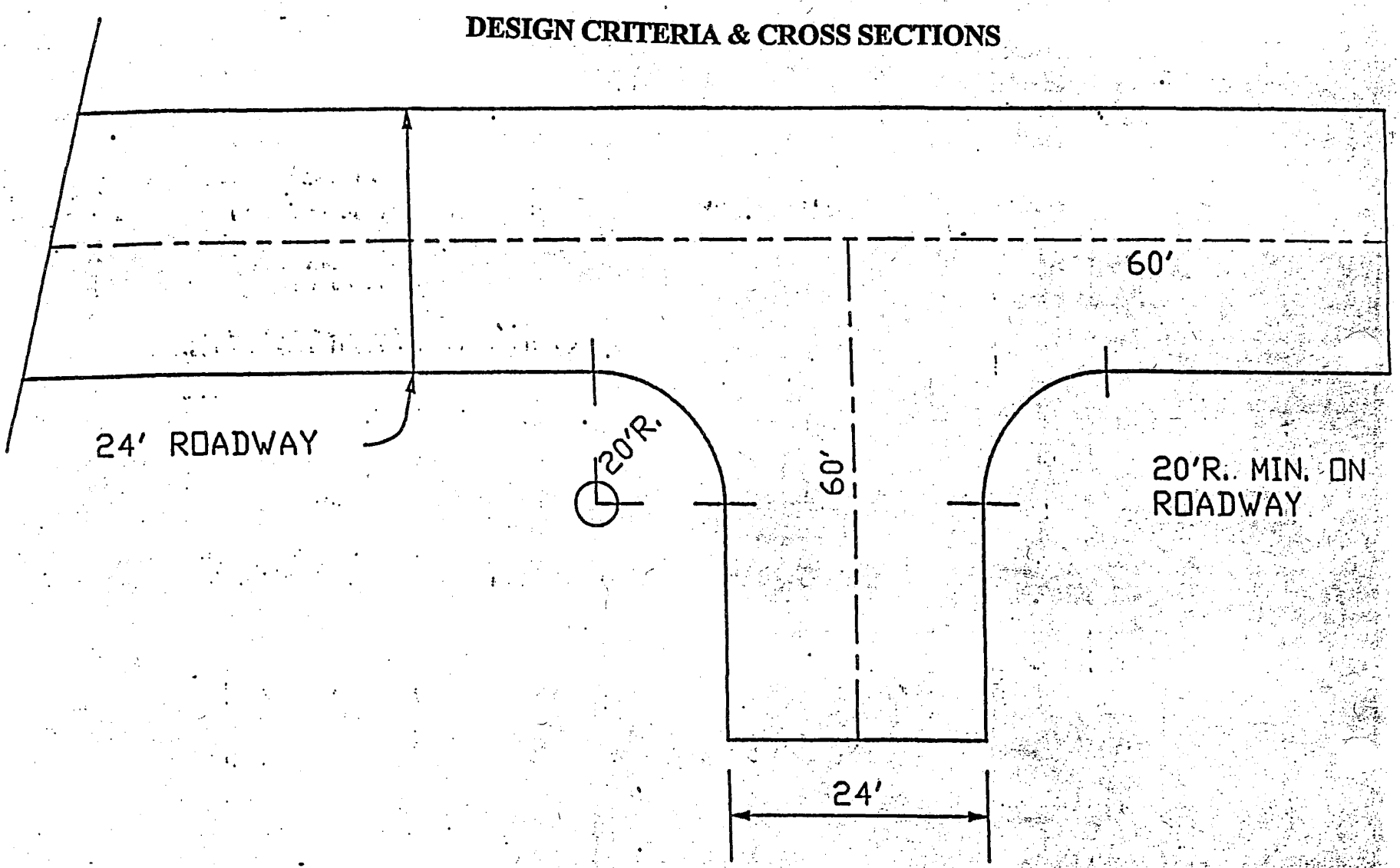


SIGN PLACEMENT

DO NOT SCALE

DATE	REVISIONS	APPROVED	DRAWN
7/16/85	NOTES AND DETAILS		CBP
4/05/84	ORIGINAL DRAWING		KLT

STREET SIGN FOR PRIVATE ROADS



DEAD-END HAMMERHEAD