

Design Guidelines  
City Of Osage Beach  
SECTION 5 - ROADS, STREETS AND PARKING AREAS  
(Revised 21 OCT 04SH)

OVERVIEW

This chapter establishes design guidelines for the construction of roads, streets, and parking areas within the jurisdictional boundaries of the City of Osage Beach. It also establishes the guidelines for reconstruction, improvement, and maintenance of existing streets within the city. Design standards are based upon the AASHTO Policy on the Geometric Design of Highways and Streets and the Supplement for Design of Very Low Volume Local Roads,  $\leq 400$  Average Daily Traffic (ADT).

CLASSIFICATION OF ROADS AND STREETS

A. Arterial Streets subdivided into three classifications:

1. Arterials over 50,000 Average Daily Traffic Count (ADT): Major through routes for high volume, moderate speed traffic, with limited access similar to the pending Rte. 54 Expressway.
2. Arterials with between 10,000 and 50,000 ADT: Major through route for high volume, restricted speed traffic, with restricted access, similar to the existing Rte 54.
3. Arterials with between 5,000 and 10,000 ADT: Major connecting through routes similar to Rte. 42, KK and D Roads.

The design criterion shall be as indicated in Table I - Design Criterion.

B. Collector Streets. Collector are those that streets that intersect with arterial streets and/or local streets and serve primarily local traffic from neighborhoods to through routes. Dependant upon traffic count and local conditions the access will be restricted. Collector Streets are subdivided into two classifications:

1. Collector Street with over 3,000 ADT: Major lake roads such as Nichols Road, Passover Road, and Bluff Road.
2. Collector Street with 1,000 to 3,000 ADT: Lake Roads such as Case, Jefferies, Malibu, and Lazy Days.

The design criterion shall be as indicated in Table I - Design Criterion

C. Local Streets. Local streets are relatively low traffic neighborhood streets that provide access to residences or business locations and connect to collector streets. Local Streets are subdivided into four classifications:

1. Local Street with over 1500 ADT: Relatively busy neighborhood streets that serve several residences and/or condo units and connect to collectors and lesser local streets such as Dogwood Lane, Airport Road, Sunset Drive, lesser traveled portions of Nichols Road and Dude Ranch Road, etc.

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2. Local Street with between 400 and 1500 ADT: Neighborhood streets serving more than ten residences or condo units, and connecting to lesser local streets. May be dead end streets similar to: Wilson Drive, Broadwater Drive, Wyrick Road, etc.
3. Local Street with less than 400 ADT: Low use, usually dead end, streets serving less than ten residences similar to Cedar Village Lane, Sleepy Hollow Lane, End of Hawthorne Drive, etc.

The design criterion shall be as indicated in Table I - Design Criterion

DEAD END STREETS

- A. Cul-de-sacs shall be constructed on all dead-end streets and shall meet the following criterion:
  1. The minimum diameter shall be 50 feet (edge of pavement to edge of pavement).
  2. The minimum easement or right of way shall be 60 feet diameter, or back of cut or fill slope as determined by the City Engineer.
  3. In cases where terrain and other constraints prohibit the construction of a cul-de-sac a “turn-around tee” may be constructed with the approval of the City Engineer. The use of a cul-de-sac is preferred.

RESIDENTIAL PARKING AND COMMERCIAL PARKING AREAS

- A. Residential Parking
  1. Each residential property owner shall provide sufficient off street parking for his or her individual needs. Parking on the city street will not be permitted.
- B. Public Parking Areas
  1. All public and commercial facilities (except those in areas zoned as industrial) shall provide adequate parking to serve the public and employees as specified in the City of Osage Beach City Code Section 405.480, Off-Street Parking and Loading Requirements. In addition all commercial and public parking shall meet the following requirements:
    - a. All commercial, industrial, and/or public parking areas shall be asphalt or concrete paved.
    - b. The minimum structural section for asphalt paved parking areas shall be three inches of asphalt pavement on a minimum of eight inches of Type I-B Base.

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- c. The minimum structural section for concrete paved parking areas shall be six inches of reinforced concrete pavement on six inches of Type I-B Base. Reinforcement shall be # 2 bars at 12” on centers both-ways or equivalent.
- d. ADA handicapped parking shall be in accordance with:
  - 1) City of Osage Beach Code Section 405.530.
  - 2) Handicapped access ramps shall be provided as necessary.
- e. The parking area shall be drained to suitably designed storm drainage systems. Refer to the Storm Drainage Guidelines.
- f. Minimum cross-slopes for drainage shall be 0.5% for one axis and 1.0% for the transverse axis.
- g. The minimum radius for edge of pavement at entrance and exit shall be 20 feet.
- h. The minimum width of entranceway for one-way entrances shall be 12 feet, and for two-way entrances shall be 24 feet.
- i. The maximum allowable entry width for commercial parking areas shall be 40 ft, edge of pavement to edge of pavement.

EXISTING CITY STREETS – RECONSTRUCTION AND UPGRADING

- A. Many of the existing city streets do not conform to the above standards. In many cases there is inadequate right-of-way and manmade or natural obstructions that preclude significant improvement of the street. In order to accommodate these problems the following shall apply to all existing city streets.
  - 1. Arterial, Collector, and Local Streets with an ADT of over 1000 will be upgraded to the new construction standards to the maximum extent practicable. Substandard streets shall be upgraded in order of priority as set by the City Engineer, and approved by the Board of Aldermen.
  - 2. Streets with an ADT of less than 1000 will be maintained to a driveable condition approximating their condition at the time of acceptance by the city until such time as increased traffic loading or safety consideration warrant upgrading them to new construction standards, providing the City has available funding. In many cases it will not be practicable to do so. In these cases the street will be upgraded by minor grading, overlay asphalt pavements, mitigation of safety issues, and construction of drainage facilities where required. Such upgrades and improvement will be prioritized. The priority shall be set by the City Engineer and approved by the Board of Aldermen.

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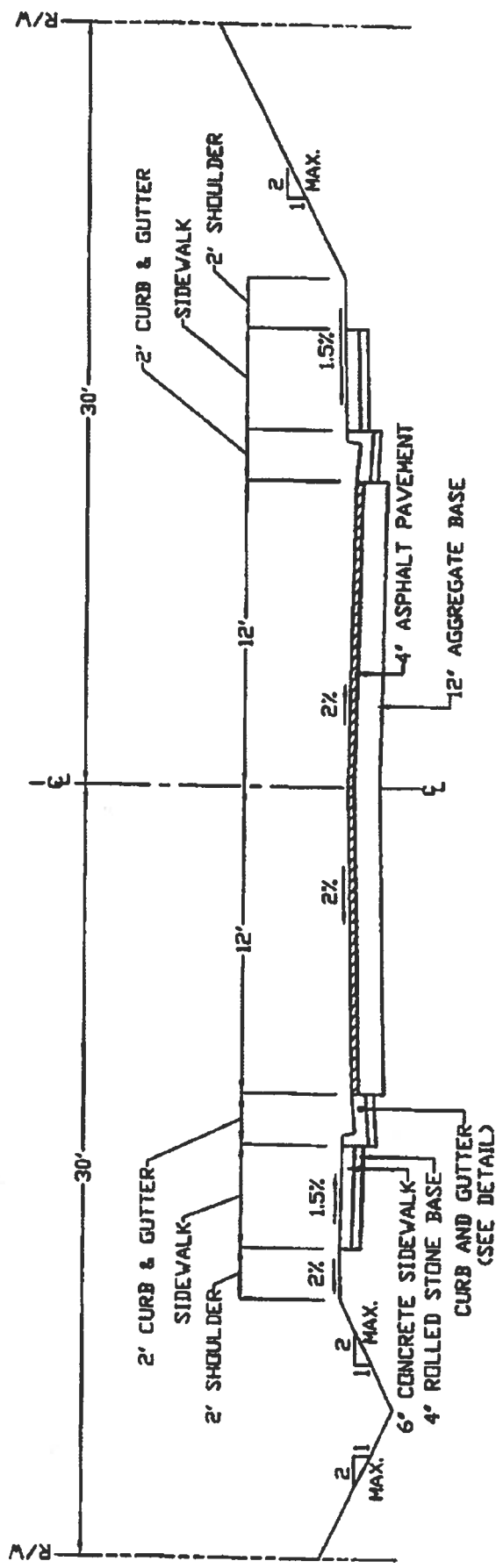
EXISTING CITY STREETS – MAINTNENACE

- A. It is the intent of this guideline that existing city streets shall be maintained in a safe, drivable condition to the maximum extent practicable with consideration given to current available funding and staffing limitations.
  
- B. In general, the roadways will be maintained to the standard at which they were accepted into the city inventory. In cases where citizen complaints, staff investigations, or the Capital Infrastructure Advisory Committee deems appropriate the Board of Aldermen shall be requested to make improvements to the roadway. This request shall be in the form of a formal request from at least 50% of the persons or businesses located along the street in question. The request will be reviewed by the Capital Infrastructure Advisory Committee, the City Engineer, and Superintendent of Public Works and recommended to the Board of Aldermen. In general, improvements will be made only in accordance with the appropriate priority list and when funding is available.
  
- C. Snow and Ice Removal
  - 1. There are a few existing streets that are inaccessible to city snow plowing equipment. In cases where the street can not be safely plowed by existing city equipment or other safety concerns are prohibitive the street will be placed upon a no-plow list at the time the street is accepted into the city inventory. Streets to be placed on the no-plow list shall be recommended by the Department of Public Works, and be approved by the Board of Aldermen. They will remain on the no-plow list until they are upgraded to new construction standards.

ROADS, STREETS AND PARKING CONSTRUCTION DETAIL DRAWINGS

Construction details and sketches are attached.

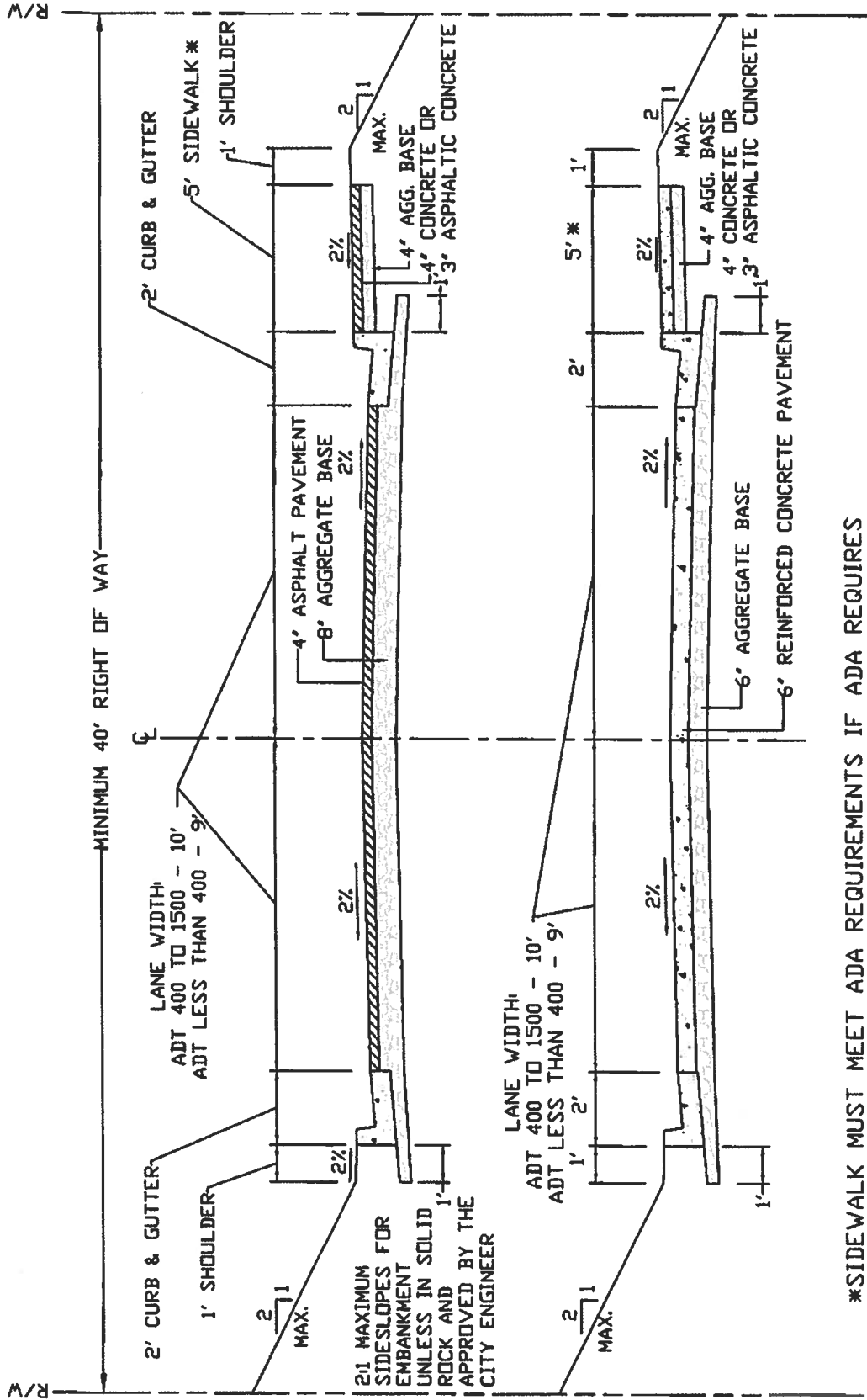
END



Date Revised:  
 October 2004  
 By: sh  
 Checked By: jlb

CITY OF OSAGE BEACH  
 TYPICAL DETAIL  
 ARTERIAL STREET

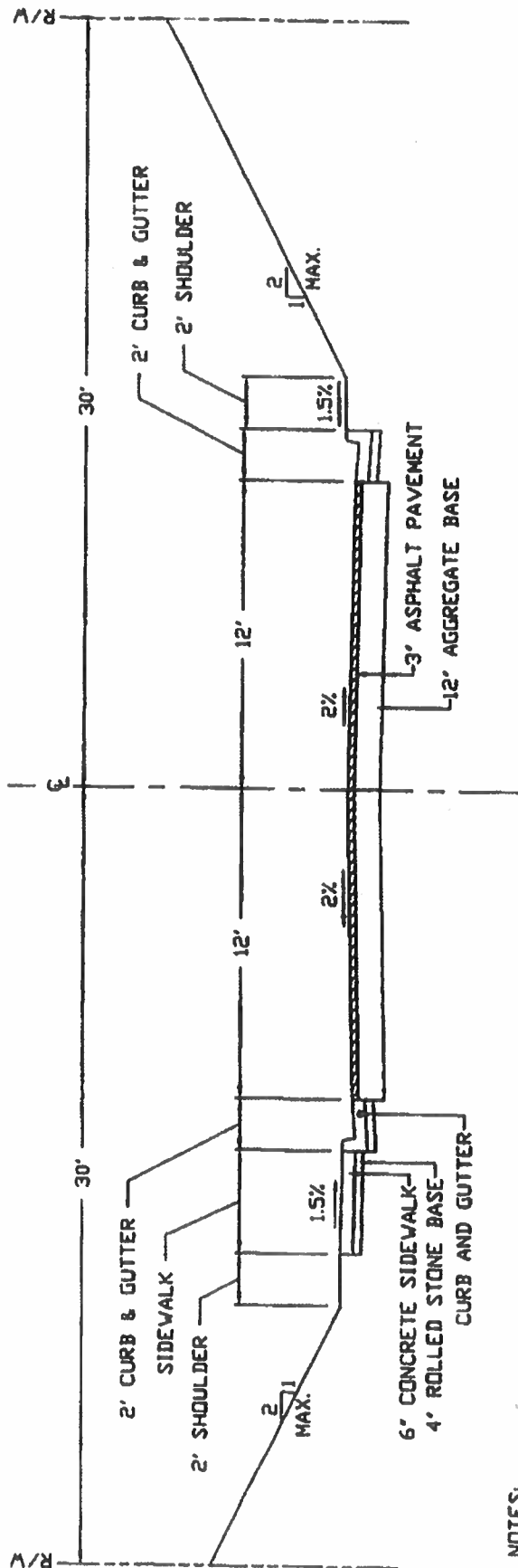
Design Guideline:  
 SECTION 5  
 ROADS, STREETS AND  
 PARKING AREAS  
 Drawing No:  
 V-1



\*SIDEWALK MUST MEET ADA REQUIREMENTS IF ADA REQUIRES GREATER THAN 5', SIDEWALK MUST MATCH ADA STANDARDS

Date Revised: JUNE 2017	Design Guideline: SECTION 5
By: MLM	ROADS, STREETS AND PARKING AREAS
Checked By: NE	Drawing No. V-2

CITY OF DSAGE BEACH  
TYPICAL SECTION  
COLLECTOR

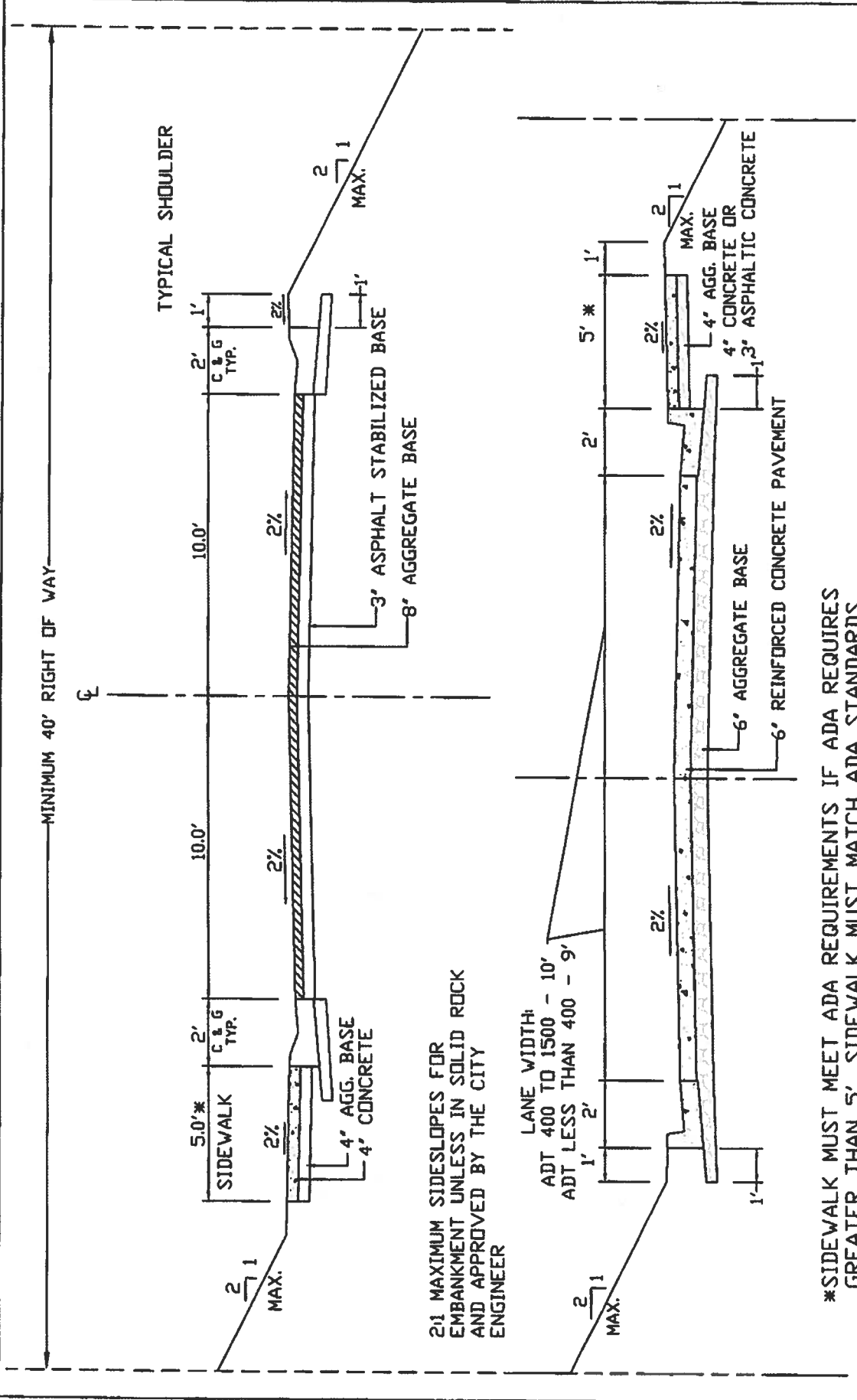


**NOTES:**

1. IN COMMERCIAL DISTRICTS A CONCRETE SIDEWALK IS REQUIRED ON BOTH SIDES OF THE ROADWAY.
2. IN RESIDENTIAL AREAS CONCRETE SIDEWALK IS REQUIRED ON ONE SIDE ONLY.
3. HANDICAPPED ACCESS RAMPS SHALL BE PROVIDED AT ALL DRIVEWAYS, INTERSECTIONS AND OTHER INTERRUPTIONS TO THE SIDEWALK GRADE.

<b>Date Revised:</b> October 2004	<b>Design Guideline:</b> <b>SECTION 5</b>	
<b>By:</b> sh	<b>ROADS, STREETS AND PARKING AREAS</b>	
<b>Checked By:</b> jlb	<b>Drawing No.</b> V-3	

**CITY OF OSAGE BEACH**  
**TYPICAL DETAIL**  
**LOCAL STREET ADT > 1500**

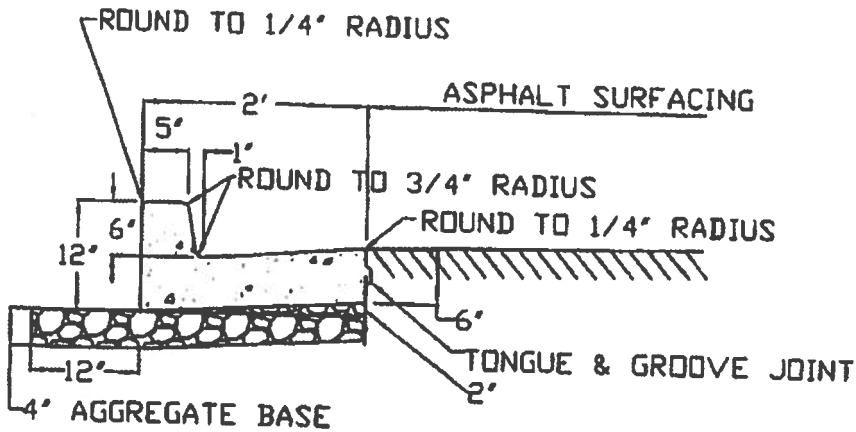


2:1 MAXIMUM SIDESLOPES FOR EMBANKMENT UNLESS IN SOLID ROCK AND APPROVED BY THE CITY ENGINEER

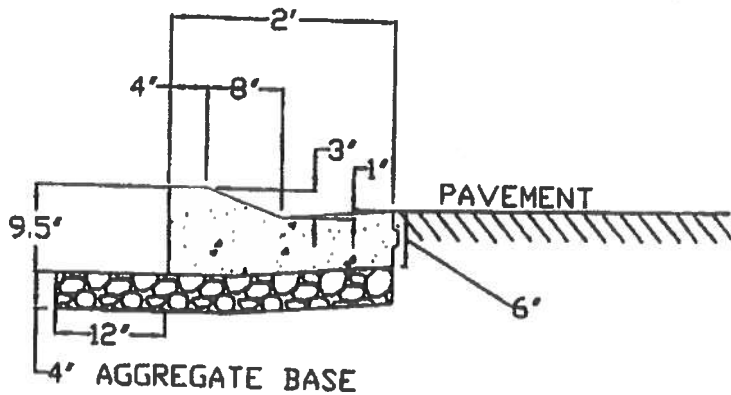
\*SIDEWALK MUST MEET ADA REQUIREMENTS IF ADA REQUIRES GREATER THAN 5', SIDEWALK MUST MATCH ADA STANDARDS

Date Revised: JUNE 2017	Design Guideline: SECTION 5	
	ROADS, STREETS AND PARKING AREAS	
By: MLM	Drawing No. V-4	
Checked By: NE	CITY OF OSAGE BEACH TYPICAL SECTION LOCAL STREET 400 TO 1500 ADT OR ADT ≤ 400	





BARRIER CURB



ROLL-BACK CURB

CURB & GUTTER NOTES

1. 3/4' EXPANSION JOINTS TO BE PLACED AT RADIUS POINT JUNCTURES AND AT 250' INTERVALS.
2. 1-1/2' DEEP CONTROL JOINTS SHALL BE INSTALLED AT APPROXIMATELY 15' INTERVALS. JOINTS SHALL PASS THROUGH THE ENTIRE CURB SECTION.
3. A MINIMUM OF 4' AGGREGATE BASE SHALL BE PLACED BENEATH ALL CURB AND GUTTER SECTIONS.

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October 2004

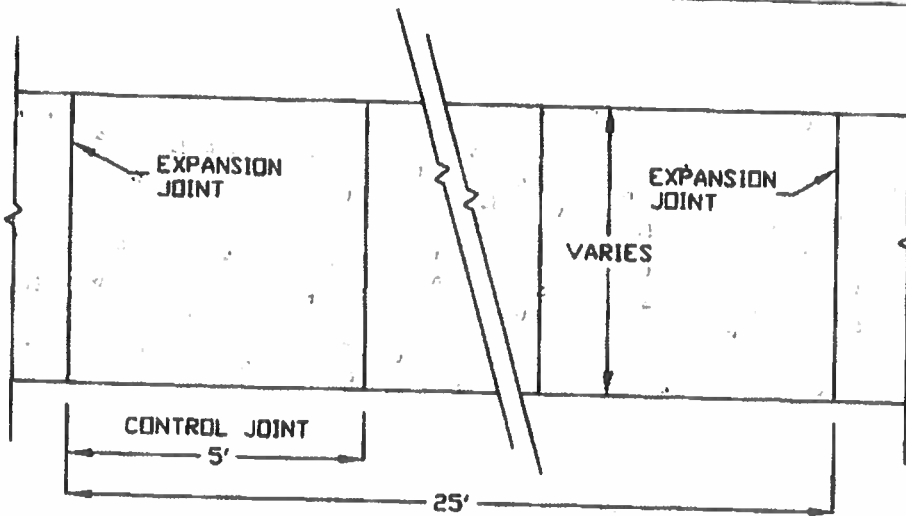
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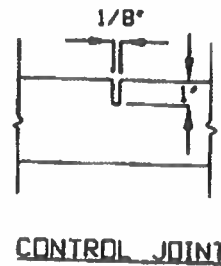
CITY OF OSAGE BEACH  
TYPICAL DETAIL  
CURB & GUTTER

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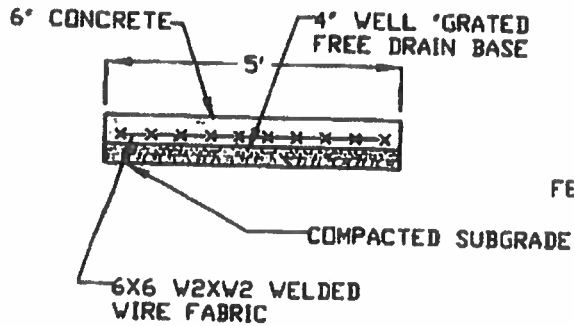
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V-5



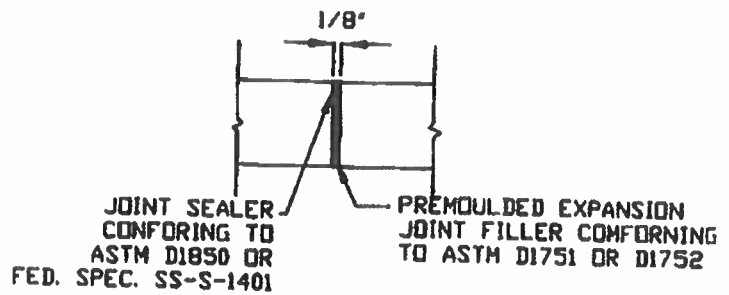
PLAN VIEW



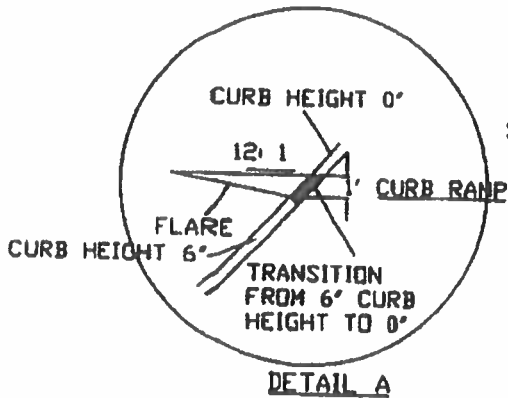
CONTROL JOINT



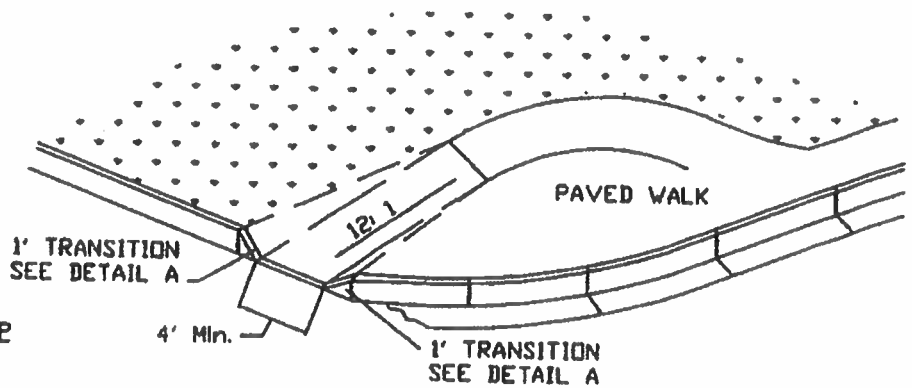
CONCRETE WALK SECTION



EXPANSION JOINT



DETAIL A

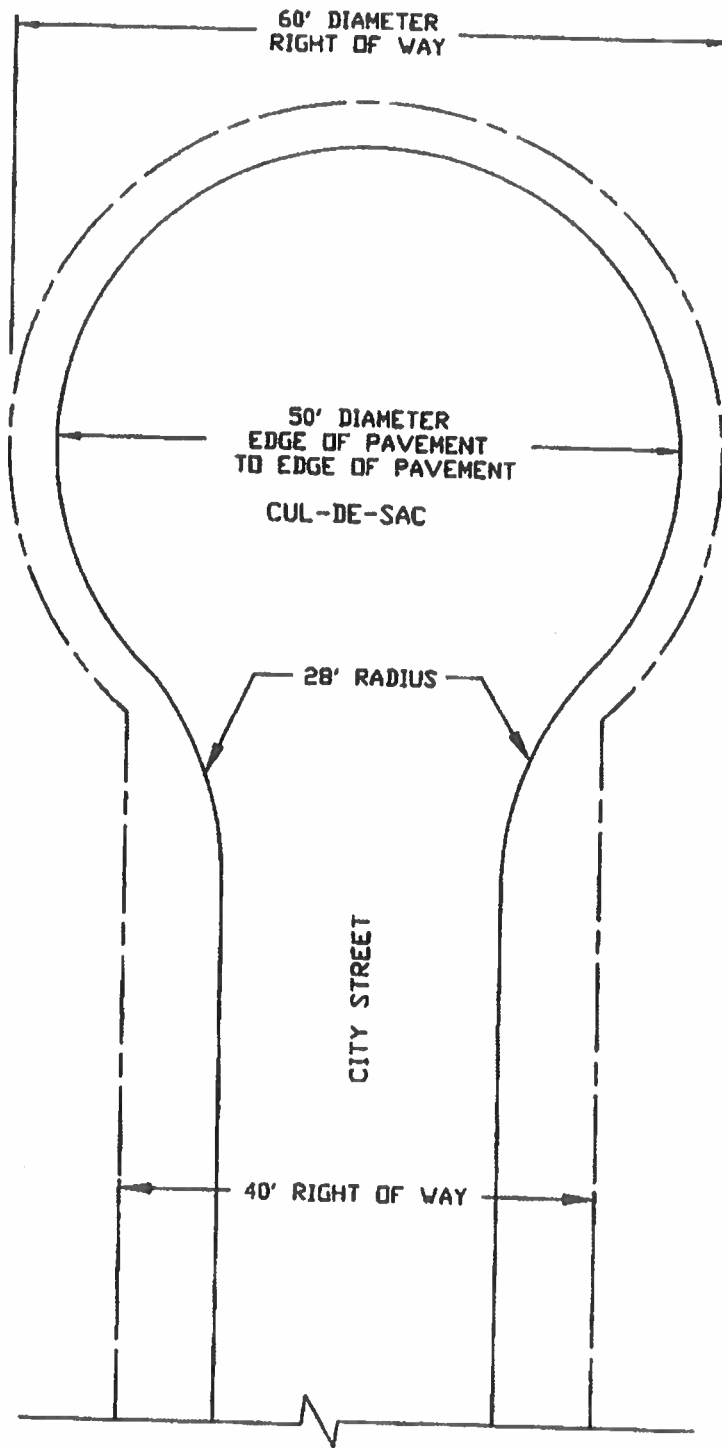


VIEW OF CURB OPENING AT STREET, SIDEWALK, ALLEY OR COMMERCIAL APPROACHES.

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CITY OF OSAGE BEACH  
TYPICAL DETAIL  
SIDEWALK

Design Guideline: SECTION 5
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Drawing No: V-6



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 sh  
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CITY OF OSAGE BEACH  
 TYPICAL DETAIL  
 CUL-DE-SAC

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 Drawing No: V-7

ASPHALT PAVED PARKING

3' ASPHALT PAVEMENT

8' AGGREGATE BASE  
(COMPACTED)

CONCRETE PAVED PARKING

6' REINFORCED CONCRETE

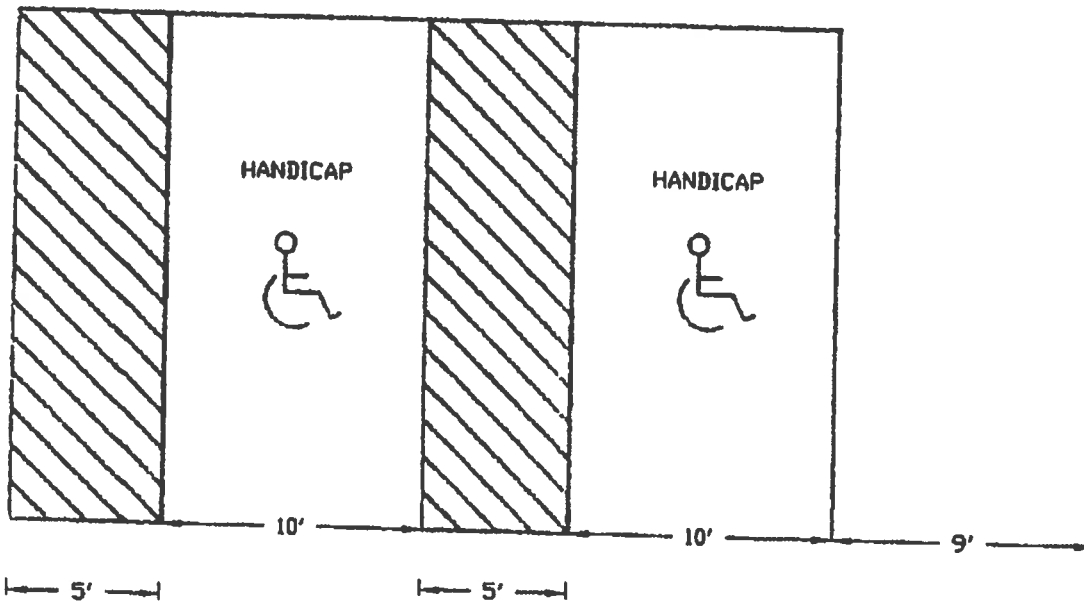
6' AGGREGATE BASE  
(COMPACTED)

REINFORCEMENT SHALL BE #2 BAR @ 12' CTRS.

MINIMUM CROSS-SLOPES FOR DRAINAGE IS .5% ONE AXIS AND 1.0% TRANSVERSE AXIS.

TYPICAL STRUCTURAL SECTION PAVED PARKING

NOT TO SCALE



NOTE:  
ALL PARKING LINES ARE 4' X 17 1/2'  
HANDICAP EMBLEMS ARE AT LEAST 34' W  
BY 39' H  
ALL PAINT AND PAINT APPLICATIONS  
SHALL CONFORM TO MDDOT SPECIFICATIONS.

TYPICAL MARKED PARKING AREA  
WITH HANDICAP PARKING

NOT TO SCALE

Revised:  
October 2004

sh

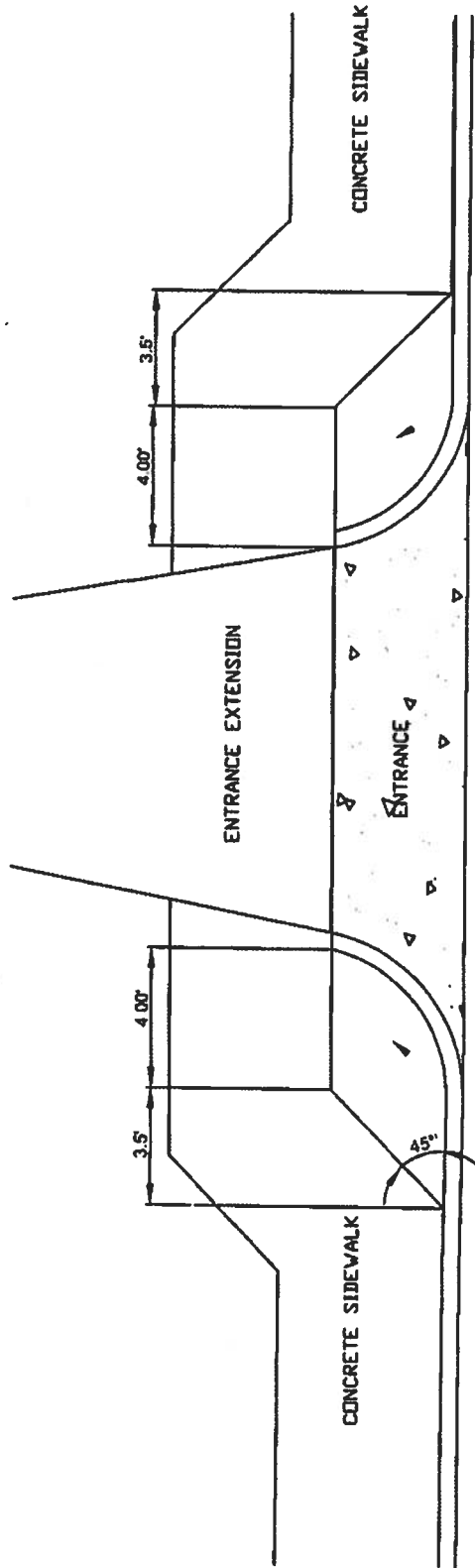
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CITY OF OSAGE BEACH  
TYPICAL DETAIL  
PARKING AREA

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SECTION 5

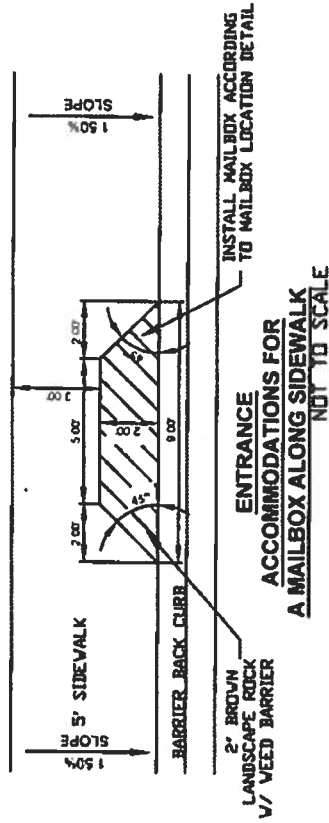
ROADS, STREETS AND  
PARKING AREAS

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V-8

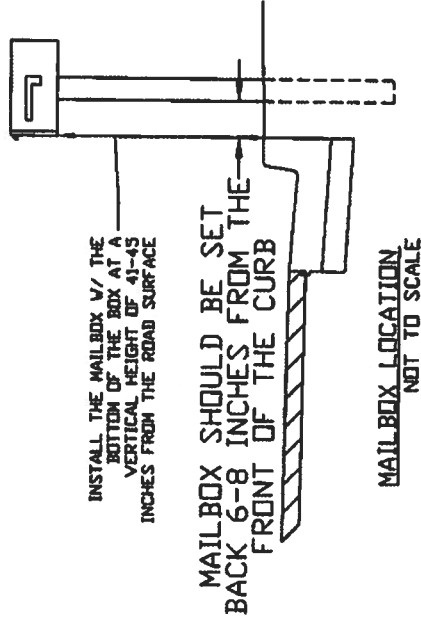


2' BROWN LANDSCAPE ROCK

**ENTRANCE ACCOMMODATIONS FOR A MAILBOX ALONG SIDEWALK**  
NOT TO SCALE



**ENTRANCE ACCOMMODATIONS FOR A MAILBOX ALONG SIDEWALK**  
NOT TO SCALE



INSTALL THE MAILBOX 1/2 THE BOTTOM OF THE BOX AT A VERTICAL HEIGHT OF 41-45 INCHES FROM THE ROAD SURFACE

MAILBOX SHOULD BE SET BACK 6-8 INCHES FROM THE FRONT OF THE CURB

MAILBOX LOCATION  
NOT TO SCALE

Date Revised:  
JUNE 2017

By:  
MLM

Checked By:  
NE

CITY OF OSAGE BEACH  
TYPICAL SIDEWALK SECTION  
MAILBOX ACCOMMODATIONS

Design Guideline:  
SECTION 5

ROADS, STREETS AND  
PARKING AREAS

Drawing No.  
V-9

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City of Osage Beach

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TABLE I - STREET AND ROADWAY DESIGN CRITERION

DESIGN CRITERION	ARTERIAL				COLLECTOR			LOCAL STREET			ONE WAY less than 400 ADT
	Over 50,000 ADT	10,000 to 50,000 ADT	5,000 to 10,000 ADT	Over 3,000 ADT	1,500 to 3,000 ADT	Over 1,500 ADT	400 to 1,500 ADT	Less Than 400 ADT			
Design Speed (mph)	MoDOT	45	35	25	25	25	15	10	10		
No. of Lanes	MoDOT	3 to 5	2	2	2	2	2	2	1		
Width of Lane (ft)	MoDOT	12	12	12	12	12	10	9	14		
Minimum Curve Radius (ft)	MoDOT	730	420	205	165	165	100	45*	45*		
Maximum Super Elevation	MoDOT	4%	4%	4%	0	0	0	0	0		
Minimum Curve Widening, (ft) Vehicle Type WB-50	MoDOT	2	4.5	7	8	8	8	5**	5**		
Minimum Intersection Inside Curb Radius	MoDOT	70	50	50	30	30	30	30	30		
Maximum Grade	MoDOT	8%	12%	12%	12%	15%	15%***	15%***	15%***		
Max. K Value	MoDOT	61	29	29	19	12	12	3	3		
Minimum Sight Distance	MoDOT	360	250	155	155	155	100	80	80		
Structural Cross Section	MoDOT	4" AC Pave 12" AB	4" AC Pave 12" AB	4" AC Pave 12" AB	4" AC Pave 12" AB	3" AC Pave 12" AB	3" AC Pave 12" AB	3" AC Pave 8" AB	3" AC Pave 8" AB		
Curb & Gutter	MoDOT	Optional	Required	Required	Required	Required	Required	Required	Required		
Sidewalk	MoDOT	Both Sides	Both Sides	Both Sides	Both Sides	One Side	One Side	NO	NO		

\*Minimum width of pavement is 23 ft. curb to curb.

\*\*Two-way streets only - see above

\*\*\*Steeper grades with approval of City Engineer

AC Pave = Asphaltic Concrete Pavement  
AB = Aggregate Base Course