REPORT TO CITY COUNCIL

Approved by:

_____
Keith Helmuth, P.E., Department Director

_____
Arnoldo Rodriguez, City Manager

Council Meeting of: July 7, 2021

Agenda Number: A-1

SUBJECT:

Request for direction on possible changes to the City of Madera Typical Street Cross Sections

RECOMMENDATION:

Staff recommends that the City Council (Council) consider the information included in this report and provide direction with regard to the conceptual cross sections.

SUMMARY:

Several action items contained in the Vision Madera 2025 (Vision) provide a basis to consider modifications to the current City standard plans for collector and arterial roadways. Taken as a whole, the action items include features to accommodate bicycles, pedestrians and larger park strips. These conceptual changes, if approved by the City Council, represent a significant departure from the current standard plans as well as a meaningful step toward the City of Madera's goal of becoming a more walkable and bikeable community.

The conceptual changes were originally considered at a Council meeting on June 3, 2015. Council concurred with the then recommended modifications. Those same modifications are presented herein.

DISCUSSION:

In recognition of the action items presented in the Vision, Staff prepared draft standard plan concepts as well as associated illustrations (see Attachments) of conceptual collector and arterial street cross sections in preparation for possible later adoption by the City Council. Those concepts were presented to Council on June 3, 2015. The draft standard plans contain a number of changes intended to address the following action items found in the Vision Action Plan:

1. Action Item 126.8 - Update arterial and collector streets to incorporate larger park strips or enhancing features, such as incorporating meandering sidewalks into design standards.
2. Action Item 132.2 - Update arterials and collector streets to accommodate bicycles, pedestrians and transit vehicles.

3. Action Item 401.4 - Explore funding options for safe pedestrian crossings at dangerous intersections, including trail undercrossings and systems such as embedded crosswalk lights.
4. Action Item 401.5 - Ensure accessible paths of travel throughout the City.
5. Action Item 401.6 - Explore options for enhancing the walking experience through street standard plans that require meandering sidewalks and wider park strips.

These action statements from the Vision also provided direction to the City's General Plan update in 2009. The General Plan places similar emphasis on improving walkability in the community and providing enhanced opportunities for all types of non-motorized transportation. Achieving the goals of these action items relies in large part on changing the City's standards for street design and construction. Changes that would better reflect those goals have been incorporated into the draft street cross sections provided for the Council's consideration, including:

- Dedicated Bike Lanes – Known as a Class II Bike Lane, a dedicated "in-street" 5-feet bike lane is provided within both the collector and arterial road cross sections.
- Pedestrians - There a number of changes included within this discussion that are both borne from the Vision as well as other standards for pedestrian safety and accessibility. They include:
    - Sidewalk - Sidewalk width is shown to be increase from 5 to 6 feet. At 5 feet, many people find it difficult to walk in pairs or pass other pedestrians walking in the opposite direction without stepping off the sidewalk. At 5 feet, the sidewalk is perhaps more utilitarian than user-friendly as is the goal of the Vision.
    - Safety – The arterial street cross section proposes an increase in the width of the median on arterials from 16 to 17 feet. This change is proposed to provide a 6-feet pedestrian refuge at pedestrian crossings, a standard that Caltrans required on designs at the time the standards were presented to Council. Other organizations including FHWA and National Association of City Transportation Officials recommend larger refuge areas. As a result, left turn bays will also be reduced from a standard 12 feet to 11 feet. A 6-feet wide refuge better accommodates a bicycle and rider as well.
- Aesthetics – The current park strip width is 10-feet in width for both collectors and arterials. The wider width was originally proposed because it was felt it would more fully achieve the intent of the Vision and is specifically mentioned in the Vision. As a result, the landscape area within the park strip is proposed to increase from 4.5 feet to 8.5 feet on collectors and 4.5 feet to 14 feet on arterials. This change allows for a more pronounced meandering sidewalk and additional park strip area that will assists in buffering the street from the adjoining uses. Given the drought that was active when these standards were first considered in 2015, the current drought and the changing views of what constitutes an acceptable landscape scheme, park strip features will likely need to include a combination of hardscape and drought tolerant landscaping. While the densely landscaped green corridors contemplated just a few years ago is not likely to reemerge in the near term, a wider park strip and meandering sidewalk can assist in creating a safer and more visually inviting pedestrian environment called for by the Vision and the General Plan.

The results of the conceptual changes, individually or collectively, assist in creating a typical city street standard that is closer to a concept called a Complete Street. The National Complete Streets Coalition states that "complete streets" are: ". . . *designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and bus riders of all ages and abilities are able to safely move along and across a complete street.*"

Impacts of the conceptual changes ultimately come down to two things; improvement cost and the increased use of land for larger street rights-of-way that would typically be used by the adjacent property owner for development. The arterial street cross section increases the right-of-way requirement from 100 feet to 120 feet (144 feet for 6 lanes) while the collector cross section increases from 80 feet to 106 feet. Costs associated with these increases come from both the increased right-of-way dedication and improvements to be constructed within this additional area. The following table provides a comparison of existing City standards to the conceptual standards.

Comparison – Existing to Conceptual Standard			
Road Type	Existing Standard	Concept Standard	Notes
Collector (4 Travel Lane)			
Right-of-Way Width (Feet)	80	104	
Park Strip Width (Feet)	10	15	
Sidewalk Width (Feet)	5	6 (Meandering)	
Center Turn Lane Width (Feet)	11 +/-	14	
Travel Lane Width (Feet)	11 +/-	12	
Bike Lane	-	7	Includes 2'Gutter
Arterial (4 Travel Lane)			
Right-of-Way Width (Feet)	100	120	
Park Strip Width (Feet)	10	20	
Sidewalk Width (Feet)	5	6 (Meandering)	
Center Median Width (Feet)	16	17	Raised Median
Travel Lane Width (Feet)	12	12	
Inside Lanes	12	12	
Outside Lanes	18	12	Existing - Outside lanes are wide enough for parking
Bike Lane	-	7	
Arterial (6 Travel Lane)			
Right-of-Way Width (Feet)	-	144	
Park Strip Width (Feet)	-	25	

Staff assigned costs to the Transportation Facilities Impact Fee (DIF) or developer as detailed in the following table for Council review, revision and/or approval. Assignments in the manner illustrated were based on the assumption that each modification represented an enhancement that would be enjoyed by the community as a whole. Dedications without cost from developer are assumed and presented on the basis that typical roadway standards are dedicated by developer as part of the development process. If Council wishes to pursue the standards addressed in this report, staff will research what procedures need to be followed for final adoption by Council.

Asisgnment of Costs to Transporatation Impact Fees			
New/Revised Standard	Existing Reimbursement	Assumed Reimbursement	Notes
Wider Sidewalk (5' feet to 6')	-	1' Each Side	Arterial and Collector
Wider Center Turn Lane (12' to 14') (Collector)	12' (36')	14' (38')	36' and 38' respectively when including all three reimbursable lanes
Wider Median (16' to 17') (Arterial)	16' (40')	17' (41')	40' and 41' respectively when including all three reimbursable lanes
Bike Lanes	-	5' Each Side	Arterial and Collector
Park Strip Landscaping			
Collector	-	5'	
Arterial	-	10'	
Additional Right-of-Way Dedication			
Collector (13' Each Side)	-	0	By Developer
Arterial (10' Each Side)	-	0	By Developer

This staff report and associated staff presentation is intended to provide Council with an understanding of the conceptual changes prior to consideration of the DIF fees included in the Development Impact Fee Study. Should the Council express a desire to update the City's street standards to incorporate the elements described above, staff recommends that implementation not occur until such time as Council has the opportunity to review the Study and how costs affect fees when compared to the current street cross sections.

FINANCIAL IMPACT:

The results of this meeting will have no financial impacts at this time. Adoption of these standards, or as may be revised, will result in larger impact fees and increase requirements for right-of-way dedications by developers.

CONSISTENCY WITH THE VISION MADERA 2025 PLAN:

The conceptual changes to the collector and arterial standard plans may serve, in varying degrees, to address the following strategies within the Vision:

Strategy 126 - Clean, attractive streets: Expand or develop programs to create clean, safe and aesthetically pleasing streets – *Wider park strips.*

Action Item 126.8 - Update arterial and collector streets to incorporate larger park strips or enhancing features, such as incorporating meandering sidewalks into design standards – *Wider park strips.*

Action Item 132.2 - Update arterials and collector streets to accommodate bicycles, pedestrians and transit vehicles. – *Wider sidewalk and addition of bike lanes.*

Action Item 401.4 - Explore funding options for safe pedestrian crossings at dangerous intersections, including trail undercrossings and systems such as embedded crosswalk lights. – *Wider median for pedestrian refuge.*

Action Item 401.5 - Ensure accessible paths of travel throughout the City. – *Wider sidewalks*

Action Item 401.6 - Explore options for enhancing the walking experience through street standard plans that require meandering sidewalks and wider park strips. – *Wider park strips wider sidewalks.*

ALTERNATIVES:

Not approve in concept the conceptual standards in whole or in part based on discussion by Council. Depending on adjustments made to standards, goals and/or action of the Vision and General Plan may not be achieved at this time.

ATTACHMENTS:

1. Collector Standard
2. Arterial Standard – 4 Lane
3. Arterial Standard – 6 Lane

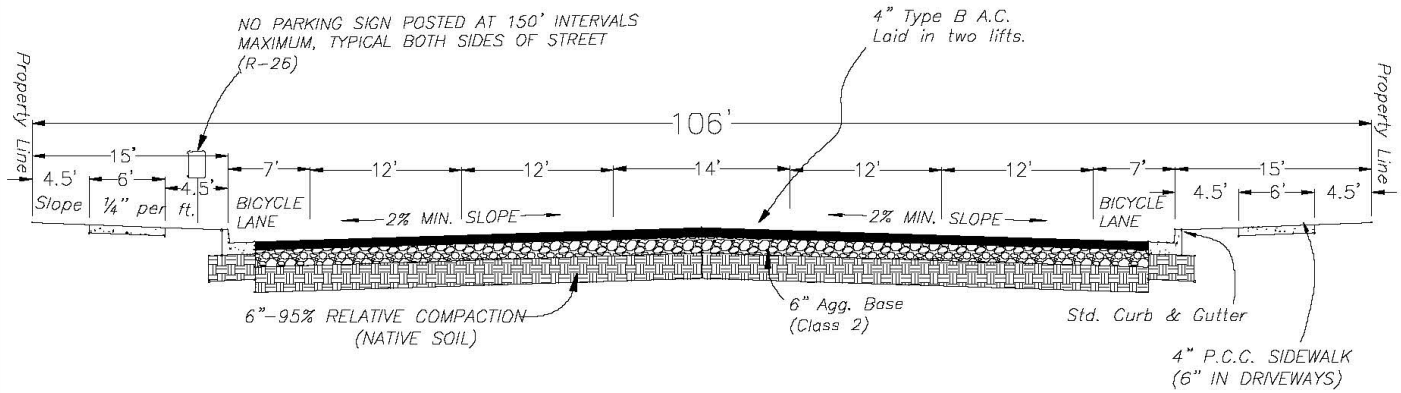
Attachment 1

Collector Standard

COLLECTOR STREET
WITH
TWO-WAY LEFT TURN LANE

REF. & REV.
FEB 2010

CITY OF MADERA
ST-



DRAFT

NOTES:

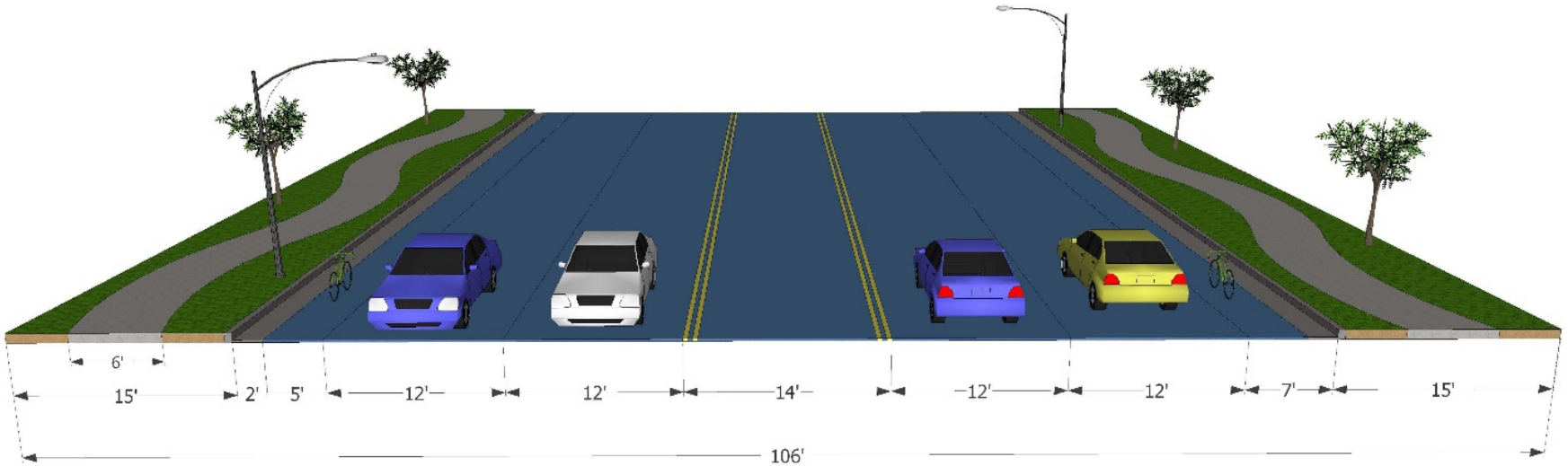
1. ASPHALTIC CONCRETE, AGGREGATE BASE, AND EARTH WORK SHALL CONFORM TO SECTIONS 39, 26, AND 19 OF THE STATE STANDARD SPECIFICATIONS LATEST EDITION.

2. THE STRUCTURAL SECTION AS SHOWN SHALL HAVE A MINIMUM SUBSOIL R-VALUE OF 50. FOR R-VALUES OF LESS THAN 50, THE STRUCTURAL SECTION SHALL BE AS FOLLOWS:

R-VALUE	AC-THICKNESS	AB THICKNESS
45-49	3"	7"
40-44	3"	8"
35-39	3"	9"
30-34	3"	10"
25-29	3"	11"
20-24	3"	12"

3. TRAFFIC INDEX=7
4. MIN. GRADE=.0015; MAX. GRADE=.05*
5. MIN. CROSS SLOPE=2%
6. MAX. CROSS SLOPE ON WIDENING=3%*
7. MIN. CROSS SLOPE ON WIDENING=1.5%
8. DESIGN SPEED=40 M.P.H.
9. MIN. RADIUS=550'
10. STOPPING SIGHT DISTANCE=300'
11. SIDEWALK SHALL BE MEANDERING TYPE WALK.

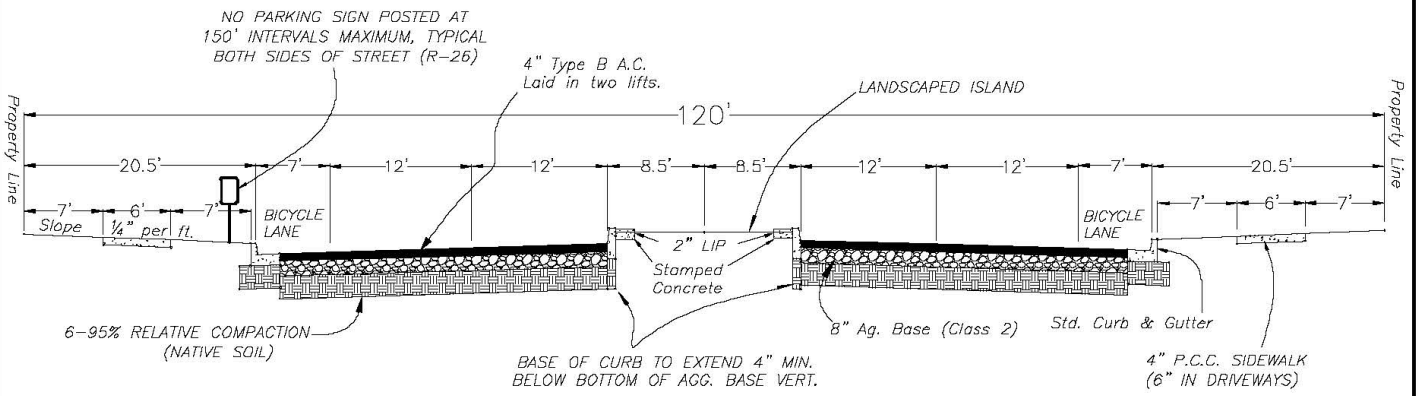
* REQUIRES PRIOR APPROVAL OF CITY ENGINEER


6'
15'
2'
5'
12'
12'
14'
12'
12'
7'
15'
106'

Attachment 2

Arterial Standard – 4 Lane

ARTERIAL STREET 4 LANE



DRAFT

NOTES:

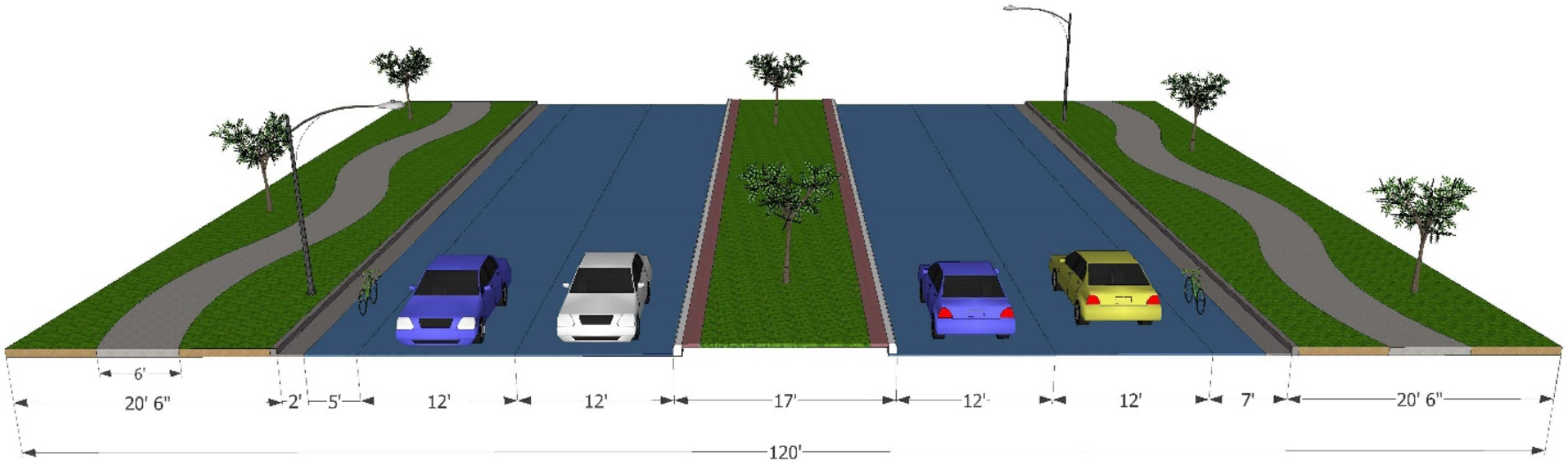
1. ASPHATIC CONCRETE, AGGREGATE BASE, AND EARTH WORK SHALL CONFORM TO SECTIONS 39, 26 AND 19 OF THE STATE STANDARD SPECIFICATIONS LATEST EDITION.
2. THE STRUCTURAL SECTION AS SHOWN SHALL HAVE A MINIMUM SUBSOIL R-VALUE OF 50. FOR R-VALUES LESS THAN 50, THE DESIGN SHALL CONFORM TO CALTRANS HIGHWAY DESIGN MANUAL, LATEST EDITION FOR DESIGN OF FLEXIBLE PAVEMENT STRUCTURAL SECTION.
3. TRAFFIC INDEX=8
   a. T.I.=9 FOR TRUCK ROUTES
4. MIN. GRADE=0.0015 MAX. GRADE=.05
5. MIN. TYPICAL CROSS SLOPE=2%
6. MAX. CROSS SLOPE=3%*
7. MIN. CROSS SLOPE ON WIDENING OF EXISTING STREET=1.5%
8. DESIGN SPEED=50 M.P.H.
9. MIN. RADIUS=1450' USING NORMAL CROWN
10. NO DRIVEWAY ACCESS FOR SINGLE FAMILY AND DUPLEX UNIT. ALL OTHER ACCESS AND SPACING SHALL BE BASED ON DESIGN SPEED.
11. NO CUTS IN THE MEDIAN ISLAND SHALL BE PERMITTED WITHIN A MINIMUM OF 500' (℄ TO ℄) OF AN INTERSECTING MAJOR STREET.
12. GRADE ON MEDIAN ISLAND SHALL BE SLOPED TOWARDS CENTER OF ISLAND TO RETAIN IRRIGATION RUNOFF.
13. SIDEWALK SHALL BE MEANDERING TYPE WALK.

* REQUIRES PRIOR APPROVAL OF CITY ENGINEER.

REF. & REV.
FEB 2010

CITY OF MADERA

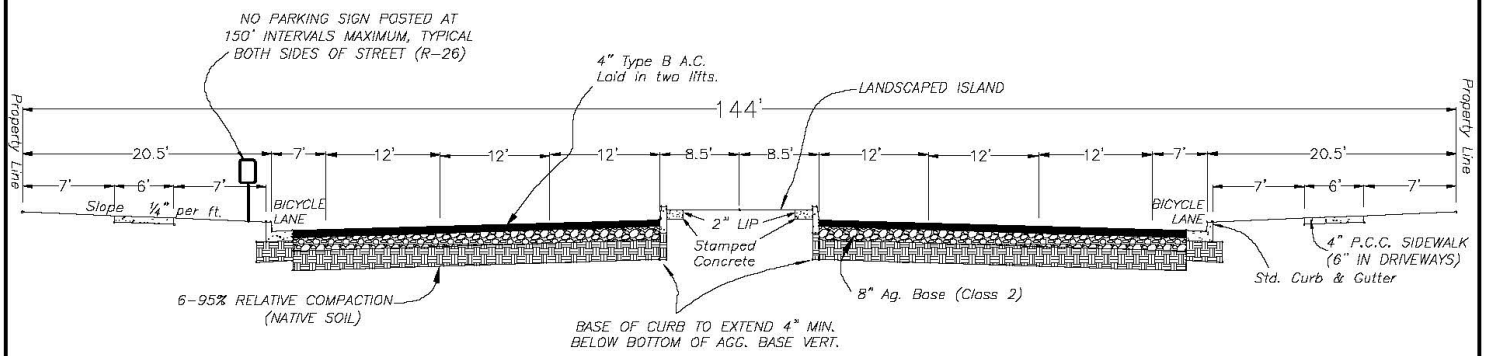
ST-


6'
20' 6"
2'
5'
12'
12'
17'
12'
12'
7'
20' 6"
120'

Attachment 3

Arterial Standard – 6 Lane

ARTERIAL STREET 6 LANE



DRAFT

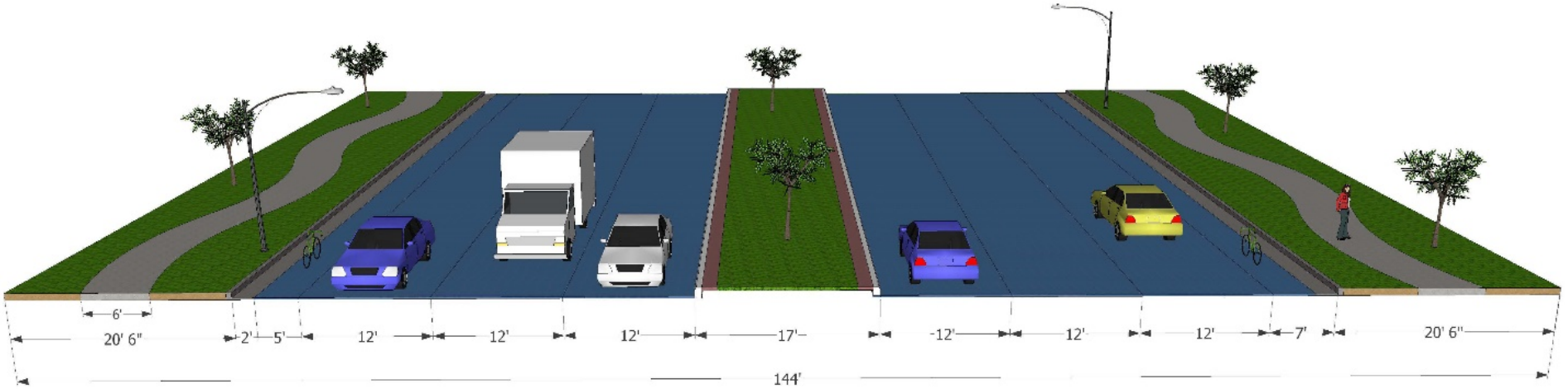
NOTES:

1. ASPHALTIC CONCRETE, AGGREGATE BASE, AND EARTH WORK SHALL CONFORM TO SECTIONS 39, 26 AND 19 OF THE STATE STANDARD SPECIFICATIONS LATEST EDITION.
2. THE STRUCTURAL SECTION AS SHOWN SHALL HAVE A MINIMUM SUBSOIL R-VALUE OF 50. FOR R-VALUES LESS THAN 50, THE DESIGN SHALL CONFORM TO CALTRANS HIGHWAY DESIGN MANUAL, LATEST EDITION FOR DESIGN OF FLEXIBLE PAVEMENT STRUCTURAL SECTION.
3. TRAFFIC INDEX=8
   a. T.I.=9 FOR TRUCK ROUTES
4. MIN. GRADE=0.0015 MAX. GRADE=.05
5. MIN. TYPICAL CROSS SLOPE=2%
6. MAX. CROSS SLOPE=3%*
7. MIN. CROSS SLOPE ON WIDENING OF STREET=1.5%
8. DESIGN SPEED=50 M.P.H.
9. MIN. RADIUS=1450' USING NOEMAL CROWN
10. NO DRIVEWAY ACCESS FOR SINGLE FAMILY AND DUPLEX UNITS. ACCESS AND SPACING SHALL BE BASED ON DESIGN SPEED.
11. NO CUTS IN THE MEDIAN ISLAND SHALL BE PERMITTED WITHIN 500' (℄ TO ℄) OF AN INTERSECTING MAJOR STREET.
12. GRADE ON MEDIAN ISLAND SHALL BE SLOPED TOWARDS CENTER OF ISLAND TO RETAIN IRRIGATION RUNOFF
13. SIDEWALK SHALL BE MEANDERING TYPE WALK.

* REQUIRES PRIOR APPROVAL OF CITY ENGINEER.

REF. & REV.
FEB 2010

CITY OF MADERA
ST-


6'
20' 6"
2'
5'
12'
12'
12'
17'
12'
12'
12'
7'
20' 6"
144'