Traffic Planning Concepts

Street Section – Feather River Blvd and Montgomery Street

The proposed Feather River Boulevard roadway cross-section of two-travel lanes and a median (raised and striped) shown in Figure 16 is consistent with the designation for Feather River Boulevard in the City of Oroville 2030 General Plan as a two-lane collector with a two-way left-turn lane. The proposed cross-section would make the street a complete street by doing the following:

- adding bicycle lanes
- completing sidewalks
- enhancing transit stops
- improving existing pedestrian crossings and adding new crossings
- adding a planter strip in appropriate locations

The addition of traffic control at intersections between Montgomery Street and Oro Dam Road (Mitchell Avenue, the Staples Shopping Center, and one other location) will help reduce speeds along the corridor and assist in making the corridor more pedestrian and bicycle friendly. A bike lane on Feather River Blvd is an important project for the City. In addition the BTP 2010 shows that a Bike path on Feather River Boulevard is second priority project for the City. The proposed raised median will reduce vehicle conflicts by channeling left turn movements at appropriate locations. The left-turn pockets will allow left turn vehicles to exit the through traffic lanes to wait for gaps in traffic to make a left turn movement.

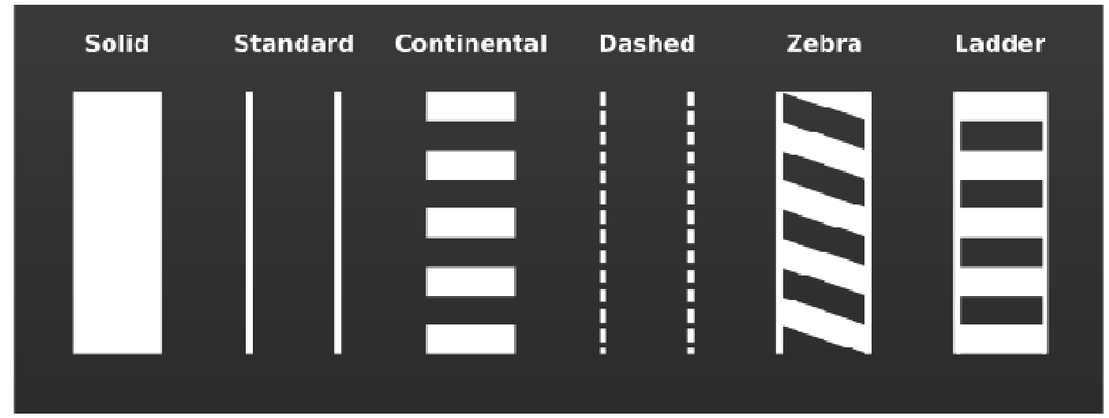
The proposed eighteen (18) feet of pavement (travel lane and bike lane) will provide room for emergency vehicles to pass stopped vehicles with no or limited delay. The eighteen feet of area between the median curb and curb and gutter has been acceptable to emergency service providers in other areas of the state.

The proposed cross-section would be able to accommodate the existing (7,600 vehicles per day) and projected 2030 (8,300 vehicles per day) traffic volumes for the Feather River Boulevard at an acceptable level of service (LOS D or better). This type of cross-section can accommodate between 15,000 to 18,000 vehicles per day

On-street parking is not recommended due to the character of the street, land use and the width of the existing right of way. This will also eliminate the need for bulb outs at intersections. A separated sidewalk is proposed when the right of way is large enough. Existing back of curb sidewalks may also remain in place until future construction provides an alternative. The existing right of way varies from 58 to 75 feet and existing face of curb to face of curb varies approximately 40 to 60 feet. See the next few pages for street section options illustrated to accommodate the range of right of way width.

Pedestrian Crossing Options

Designated pedestrian crossing areas or crosswalks are proposed at controlled stop portions of intersections. See the Controlled Stop Options section that starts on page 27. Standard striping is proposed in most cases with the exception of decorative paved crosswalks for traffic circles or primary intersections such as Montgomery Street, Mitchell Avenue and Oro Dam Boulevard. The City may also consider lighted signs or flashing markers to designate pedestrian crossing but the existing traffic load and pedestrian uses on the street do not warrant the need at this time.



Crosswalk Striping

Flashing Lights for Crosswalks

Decorative Paved Crosswalks
Similar to Downtown Oroville

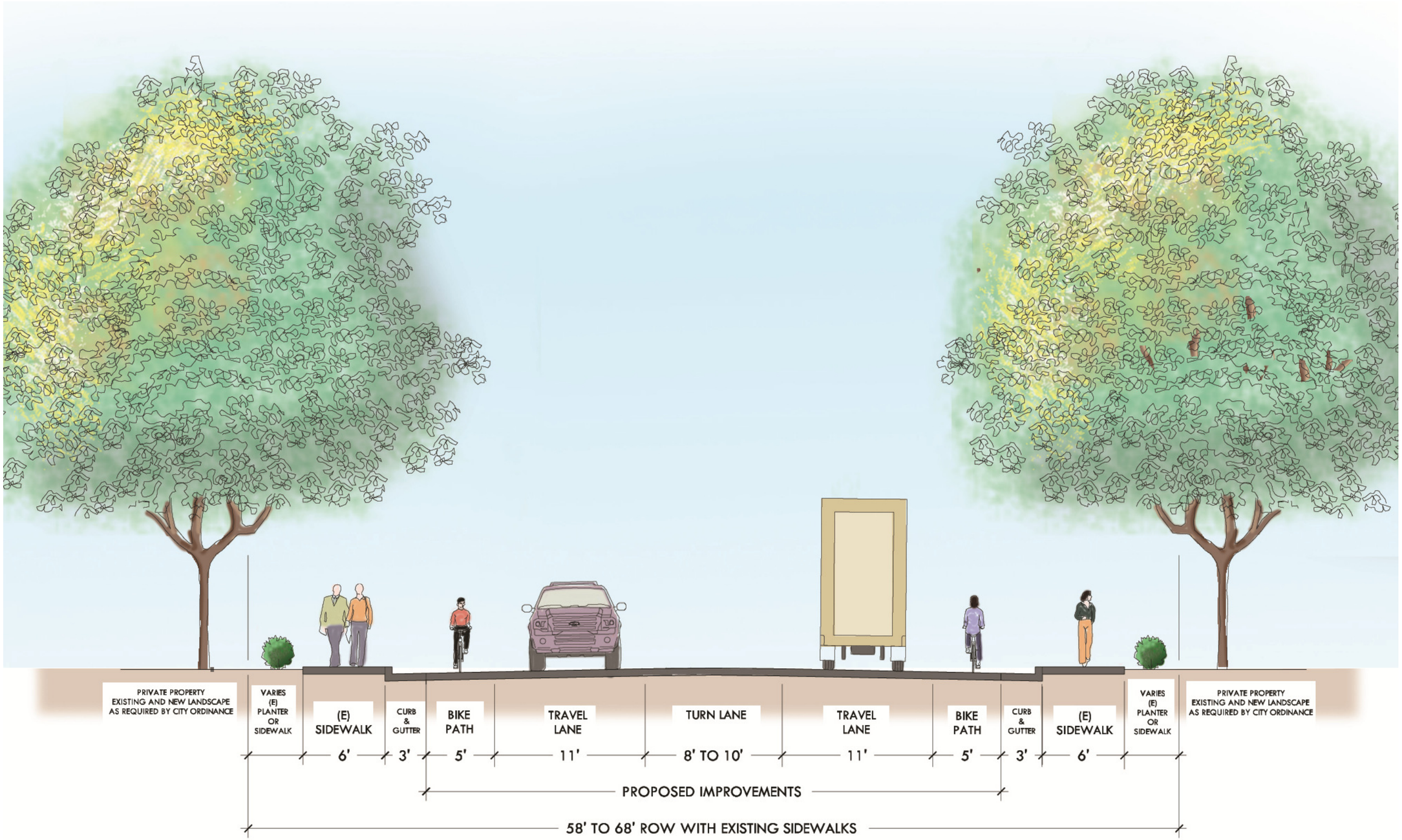


Figure 15 – Street Section without Landscape Median

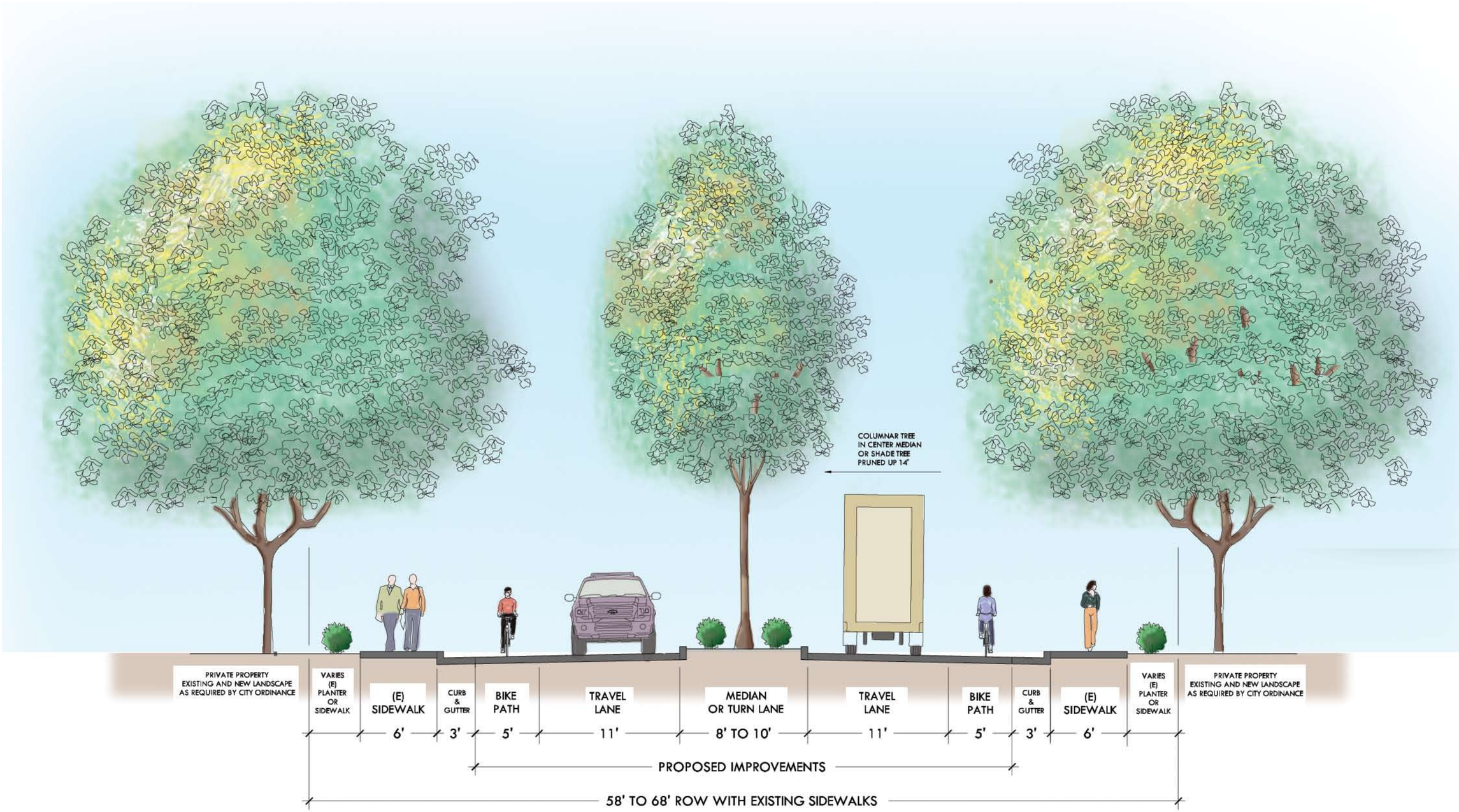


Figure 16 - Street Section with Landscape Median

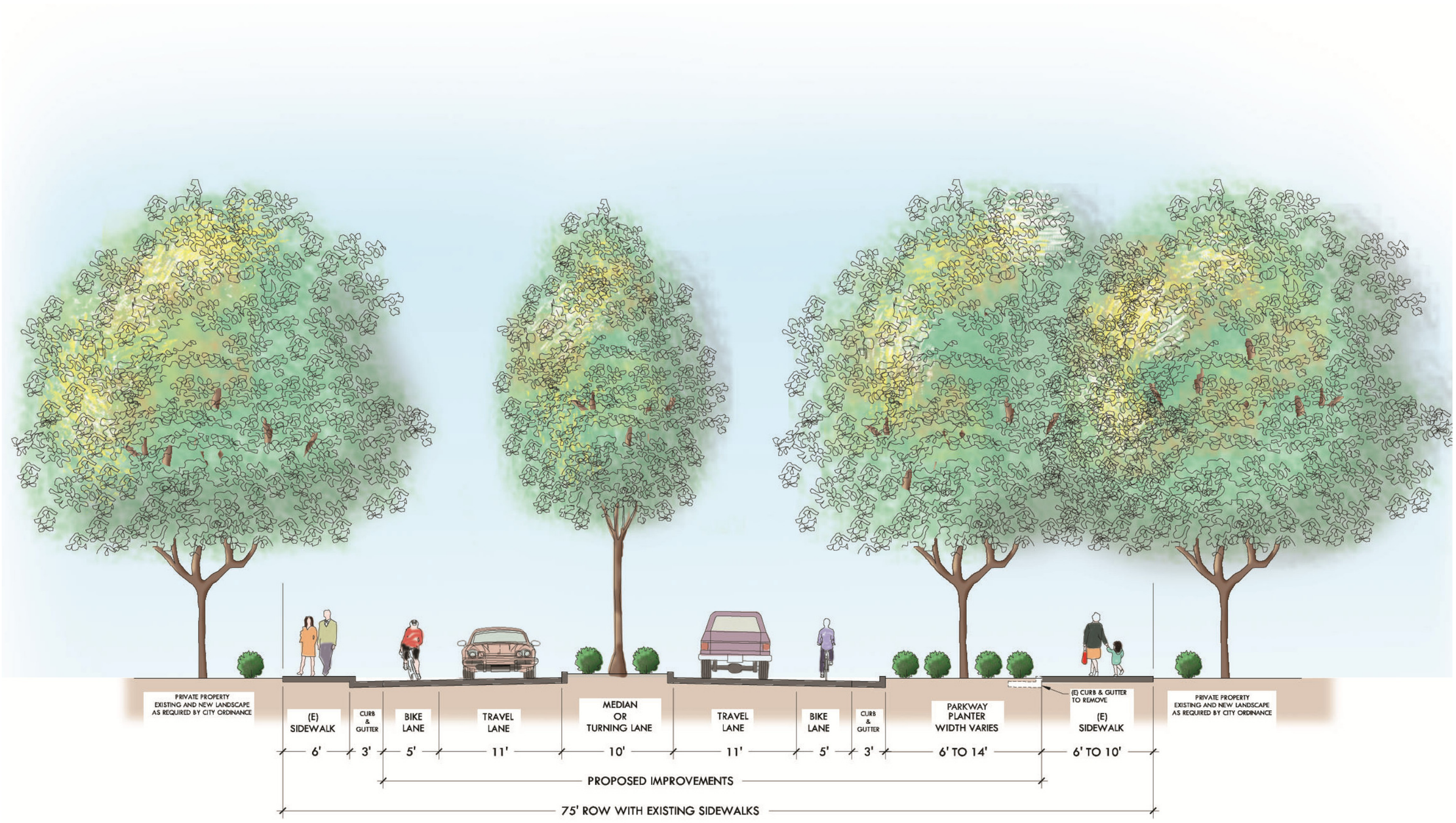


Figure 17 – Street section at 75' Right of Way with Landscape median and Parkway Planter

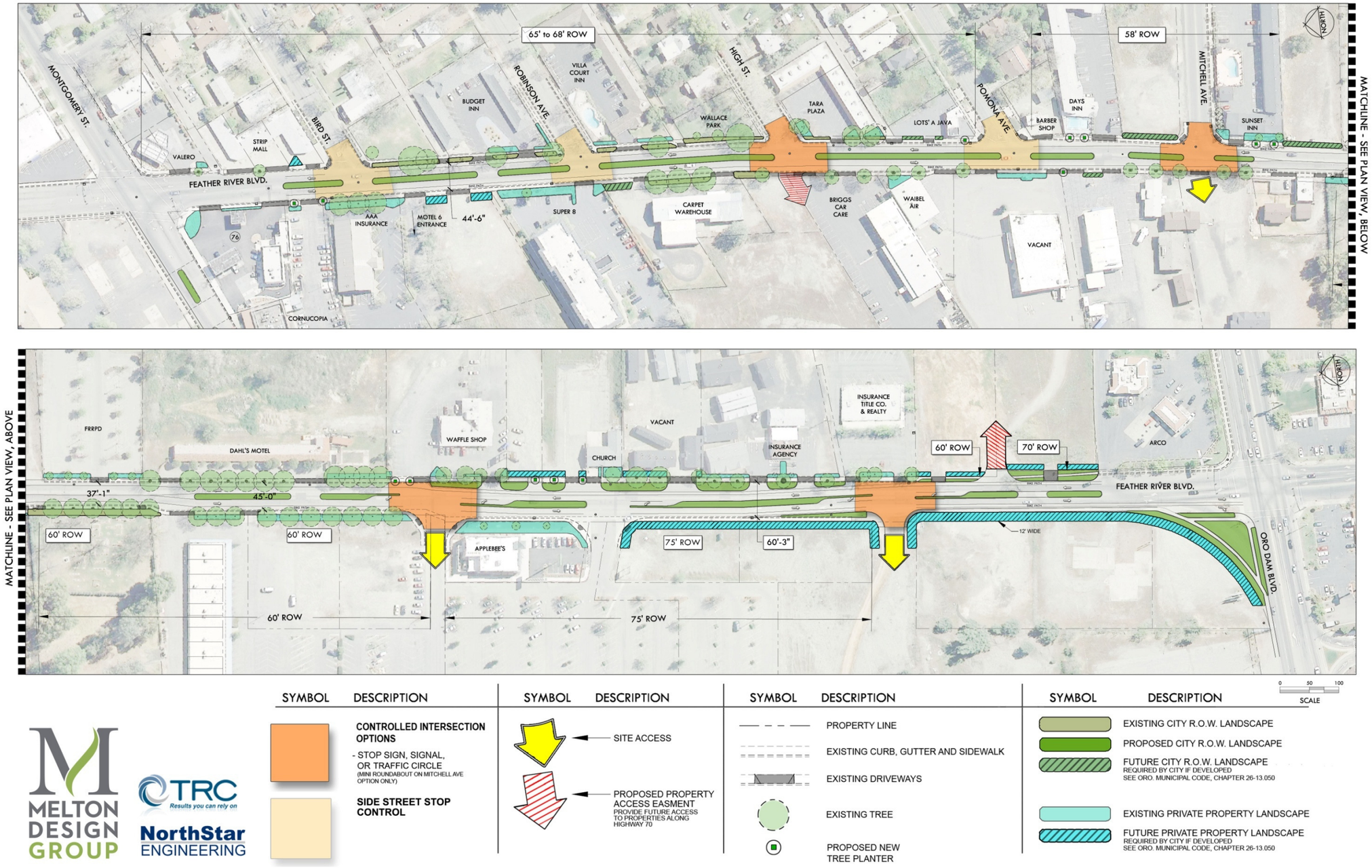


Figure 18 – Option 1 Streetscape Concept with Landscape Median Along Most of Feather River Blvd.

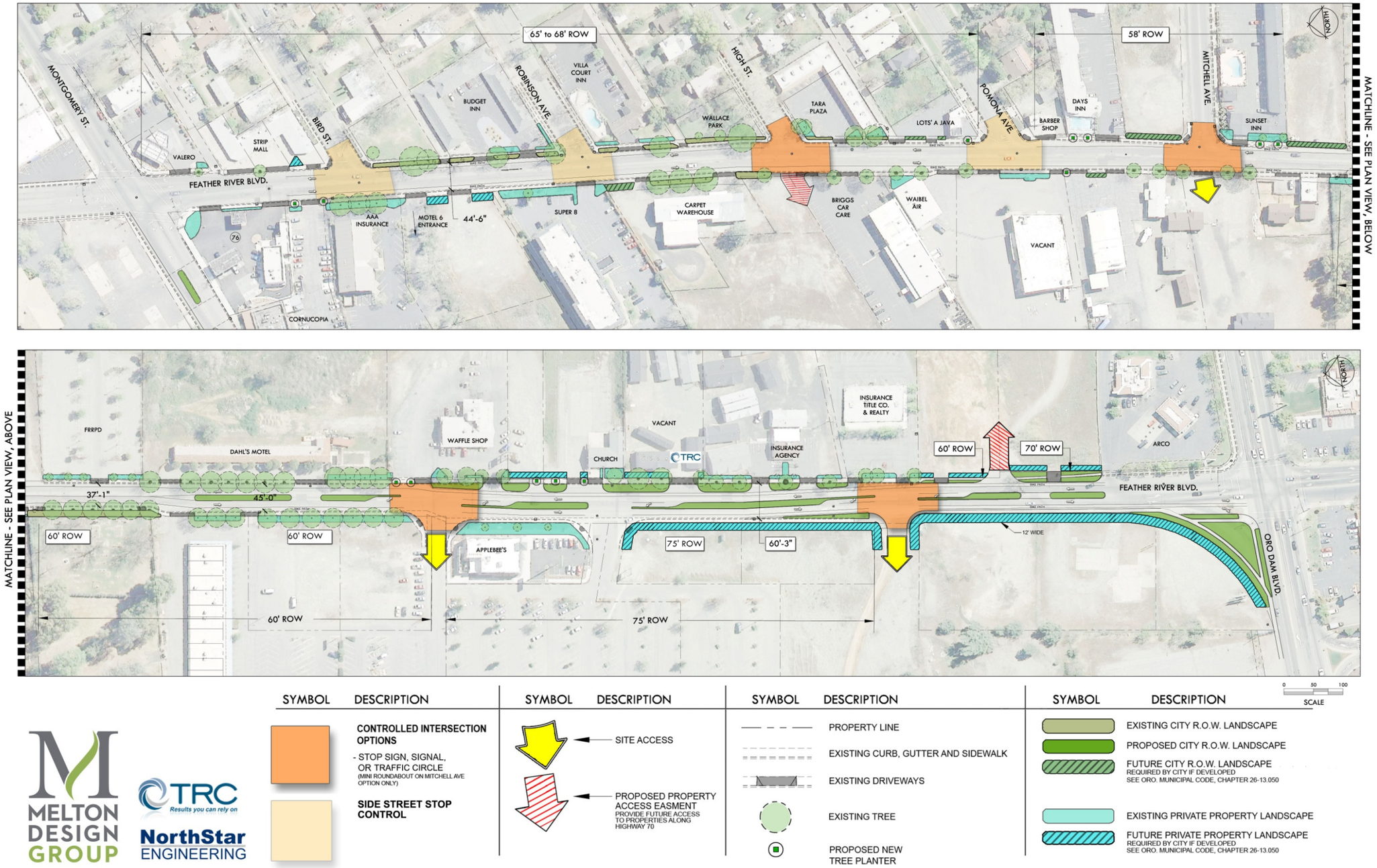


Figure 19 – Option 2 Streetscape Concept – No Median Between Montgomery Street and Mitchell Ave.

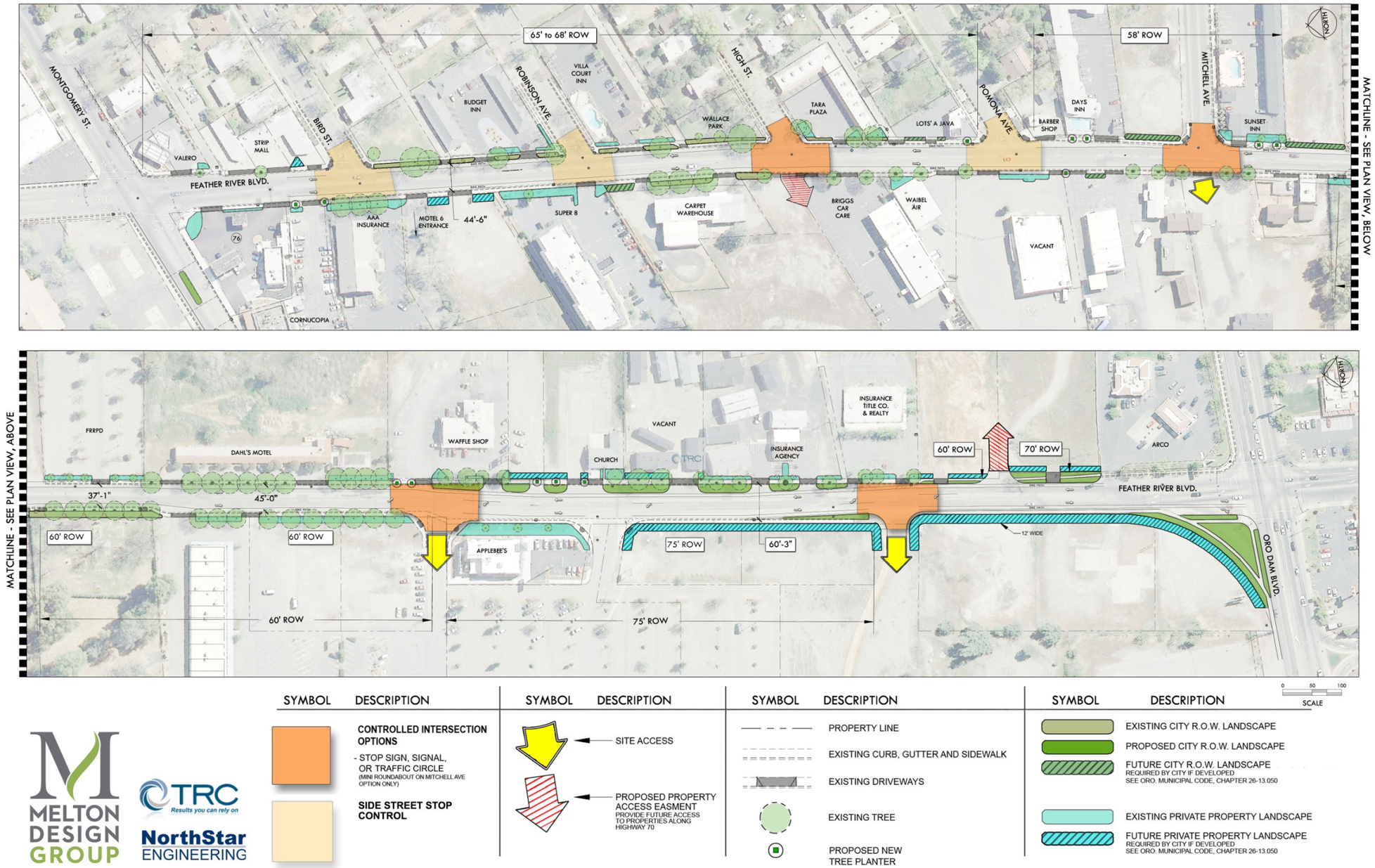


Figure 20 – Option 3 Streetscape Concept – No Medians

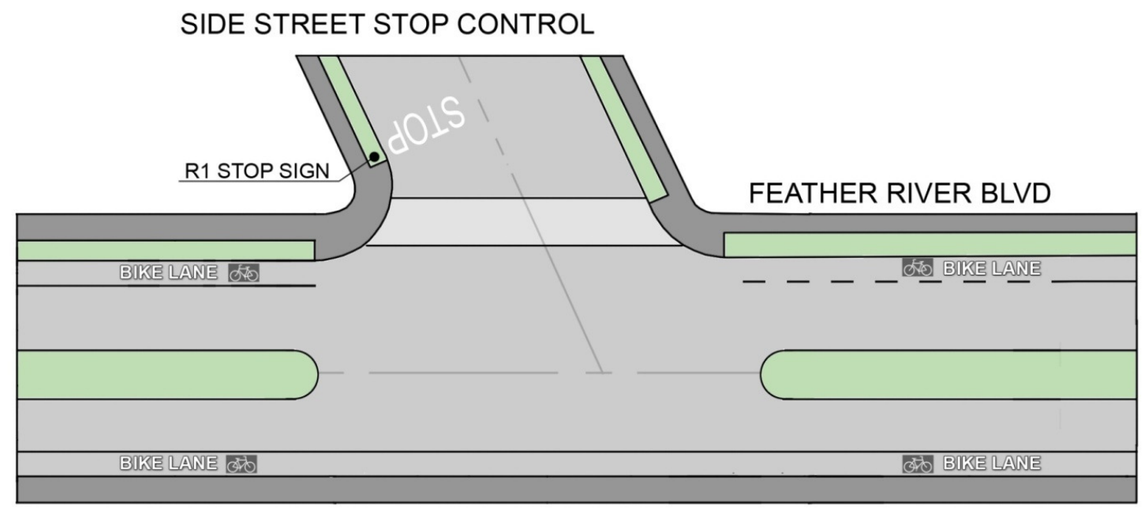
Controlled Stop Options

Side Street Stop Control

Potential Intersections: Bird Street, Robinson Avenue and Pomona Avenue

Pro: 1. Inexpensive installation cost and low maintenance costs
2. Limited delay to traffic (vehicle and bicycle) on the main street

Con: 1. Can result in significant delay to side street traffic at higher volume intersections
2. Difficult for pedestrians to cross the main street

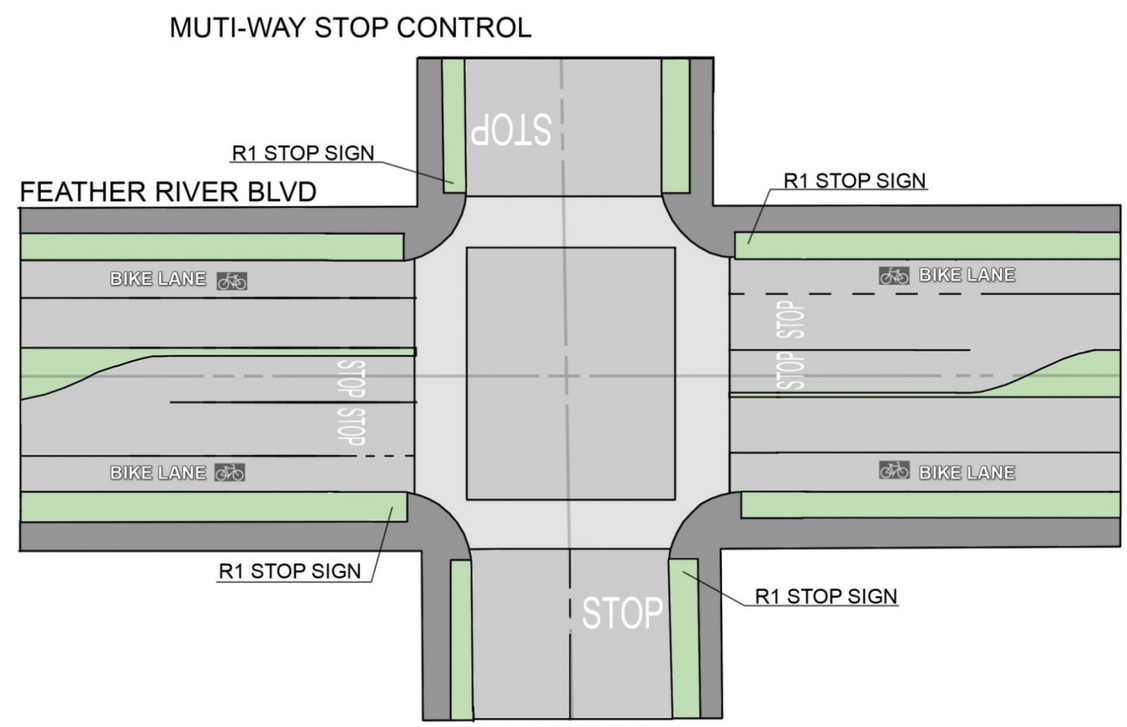


All-Way Stop Control

Potential Intersections:
Street, Mitchell Avenue and two entrances to the southwest retail center

Pro: 1. Inexpensive installation cost and low maintenance costs
2. Provides positive assignment of right-of-way for pedestrians crossing the main or minor street
3. Can slow vehicle speeds on the main street (when compared to uncontrolled conditions)

Con: 1. Can result in significant delay to main street traffic at higher volume intersections as all vehicles must stop
2. Increased delay to bicycle travel as bicycles are supposed to stop
3. Unwarranted stops signs can lead to increased violation rates

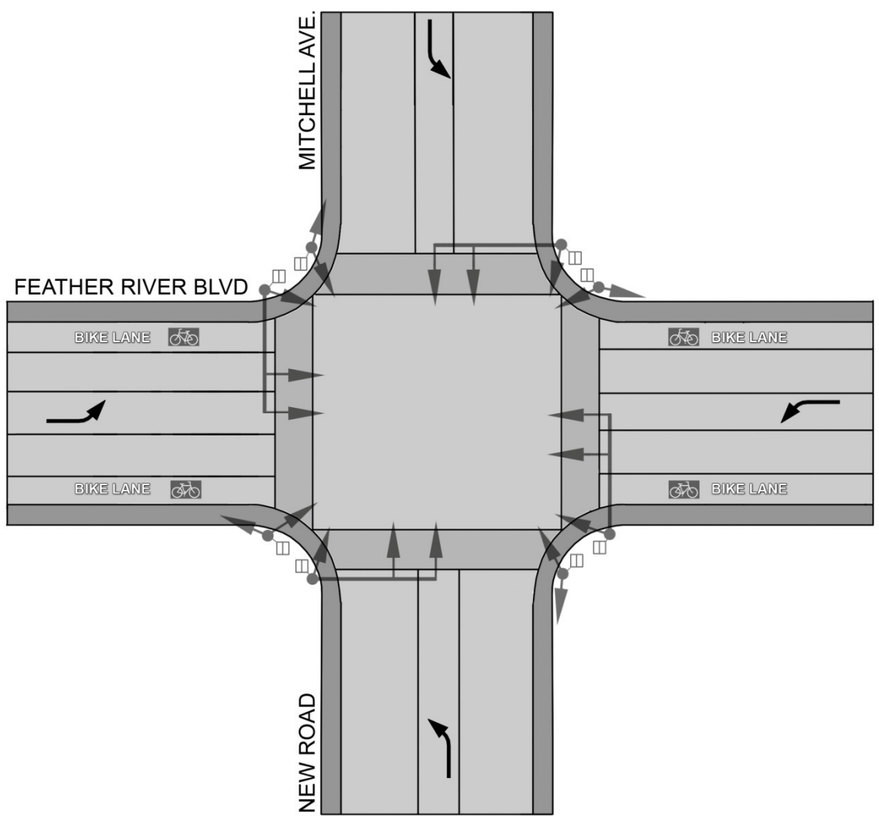


Traffic Signal Control

Potential Intersections:
Mitchell Avenue and one entrance to the southwest retail center

Pro: 1. Provides positive assignment of right-of-way for all intersection users
2. Can reduce certain types of collisions (head on or broadside)

Con: 1. Expensive installation costs and high maintenance costs

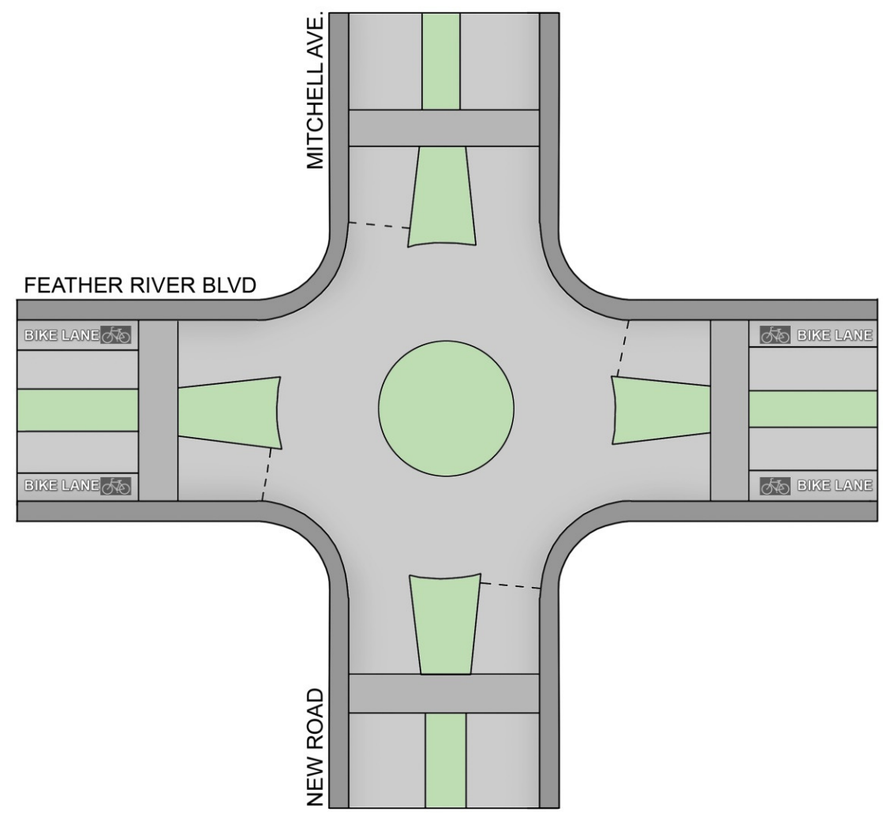


Roundabout/Mini Roundabout

Potential Intersections: Mitchell Avenue

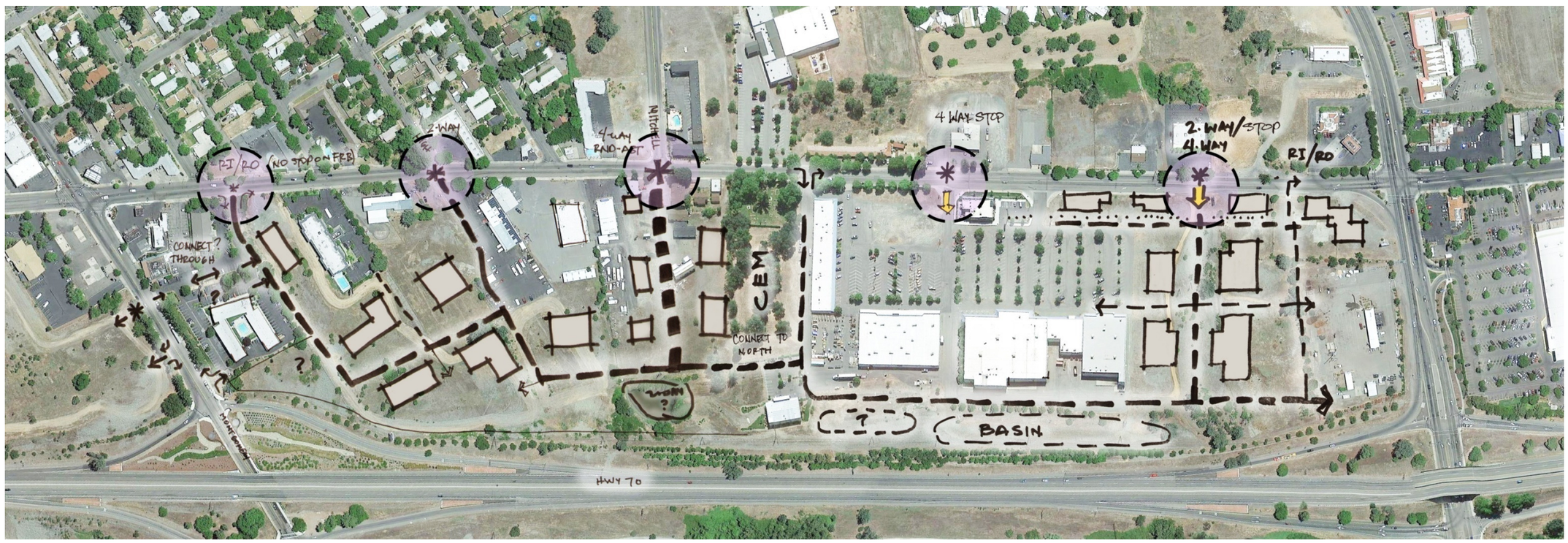
Pro: 1. Can reduce certain types of collisions (head on or broadside)
2. Reduces intersection delay when compared to all-way stop or traffic signal control
3. Less expensive and easier to maintain than traffic signal.

Con: 1. Expensive installation costs
2. Confusing for some users
3. More difficult for pedestrian users to cross the street when compared to all-way stop of traffic signal control



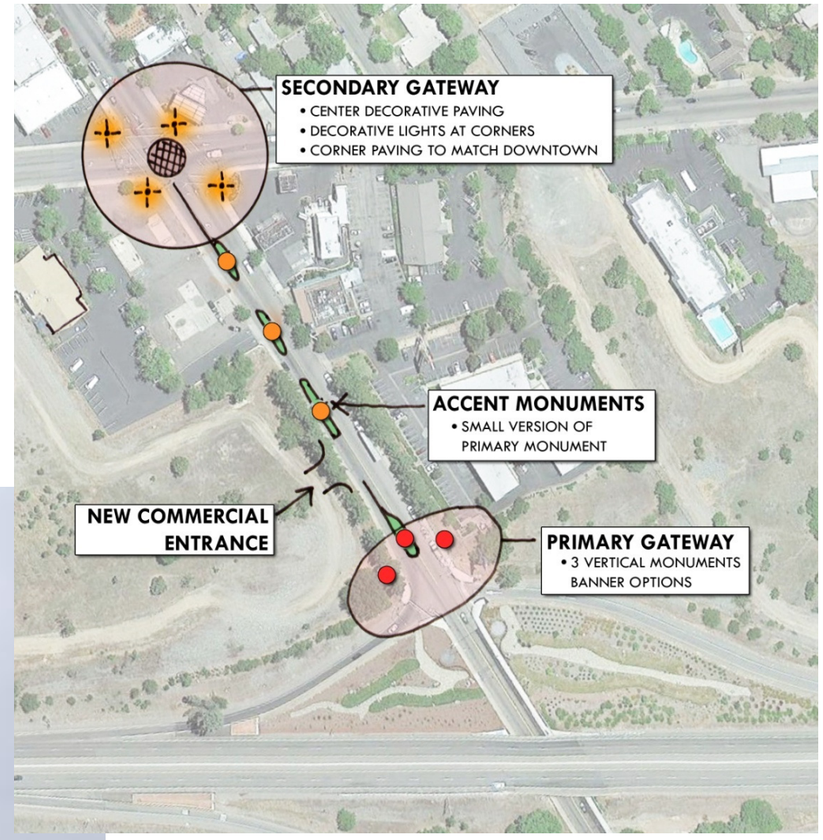
Access Easement Concept

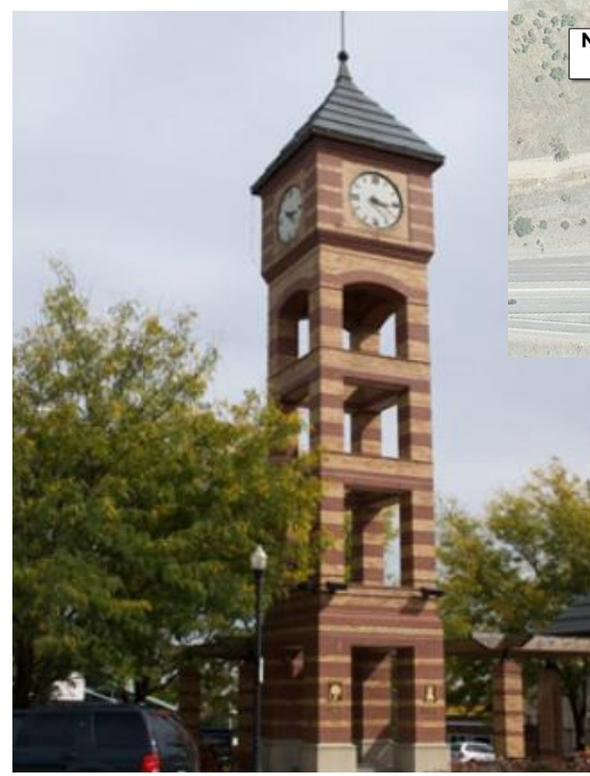
One primary factor to consider in promoting commerce within the project area is the deep lots in between Feather River Boulevard and Highway 70. This length of property, near 830 feet in some locations, can limit access to properties. A few properties are actually land locked, without an access road or easement, and others are so far back in an easement that they are difficult to notice. In an effort to promote development within these inaccessible properties, the City may consider establishing a few access easements at key intersections along the boulevard. Other easements running north and south between properties may require agreements between property owners. The concept below illustrates an example of how potential easements could improve access to the area and promote development.



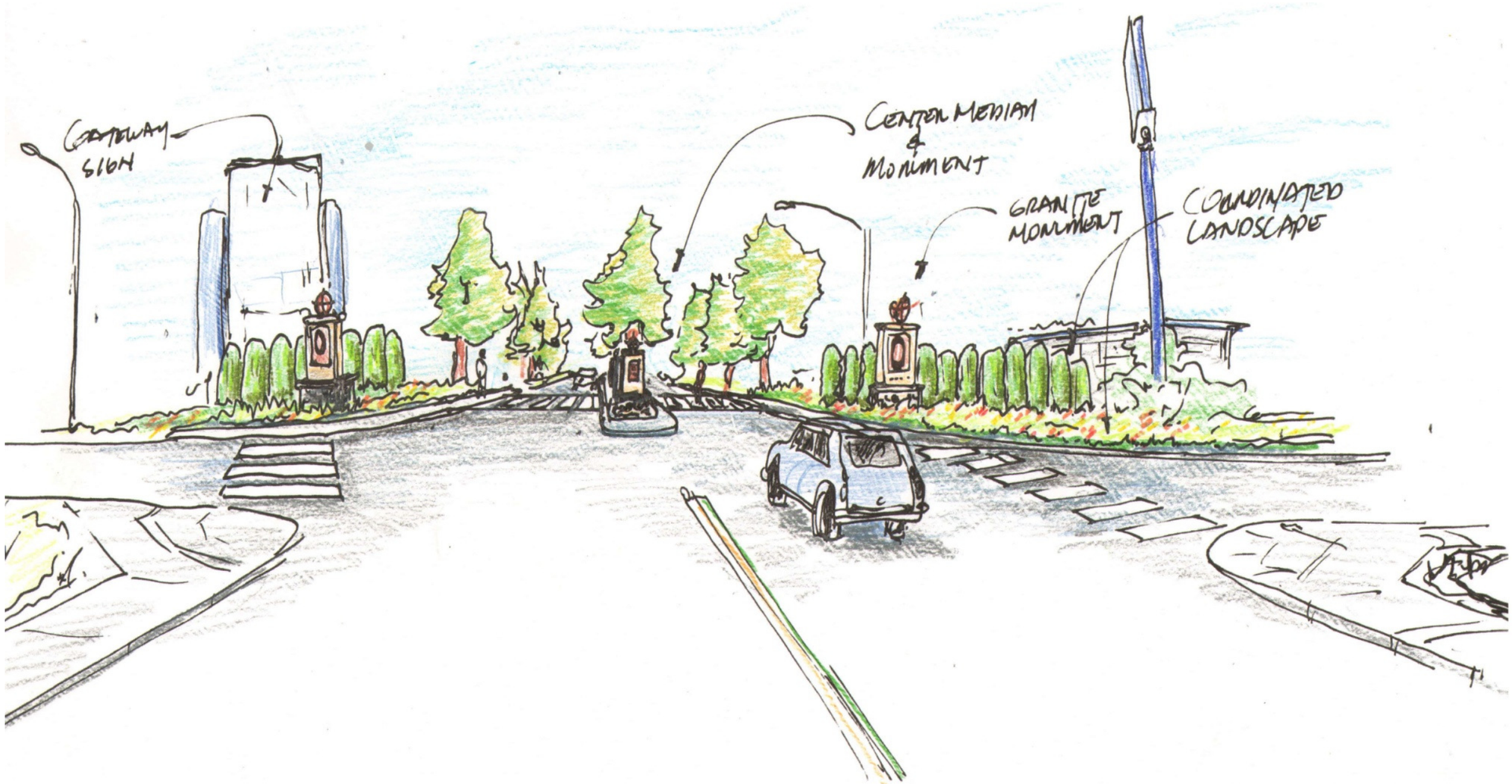
Gateway Concepts at Montgomery Street

- Vertical Monuments
- Gateway / Framed Entry to Oroville
- Small Monuments in median islands
- Decorative Lighting
- Improve Intersection at Feather River Boulevard and Montgomery St.

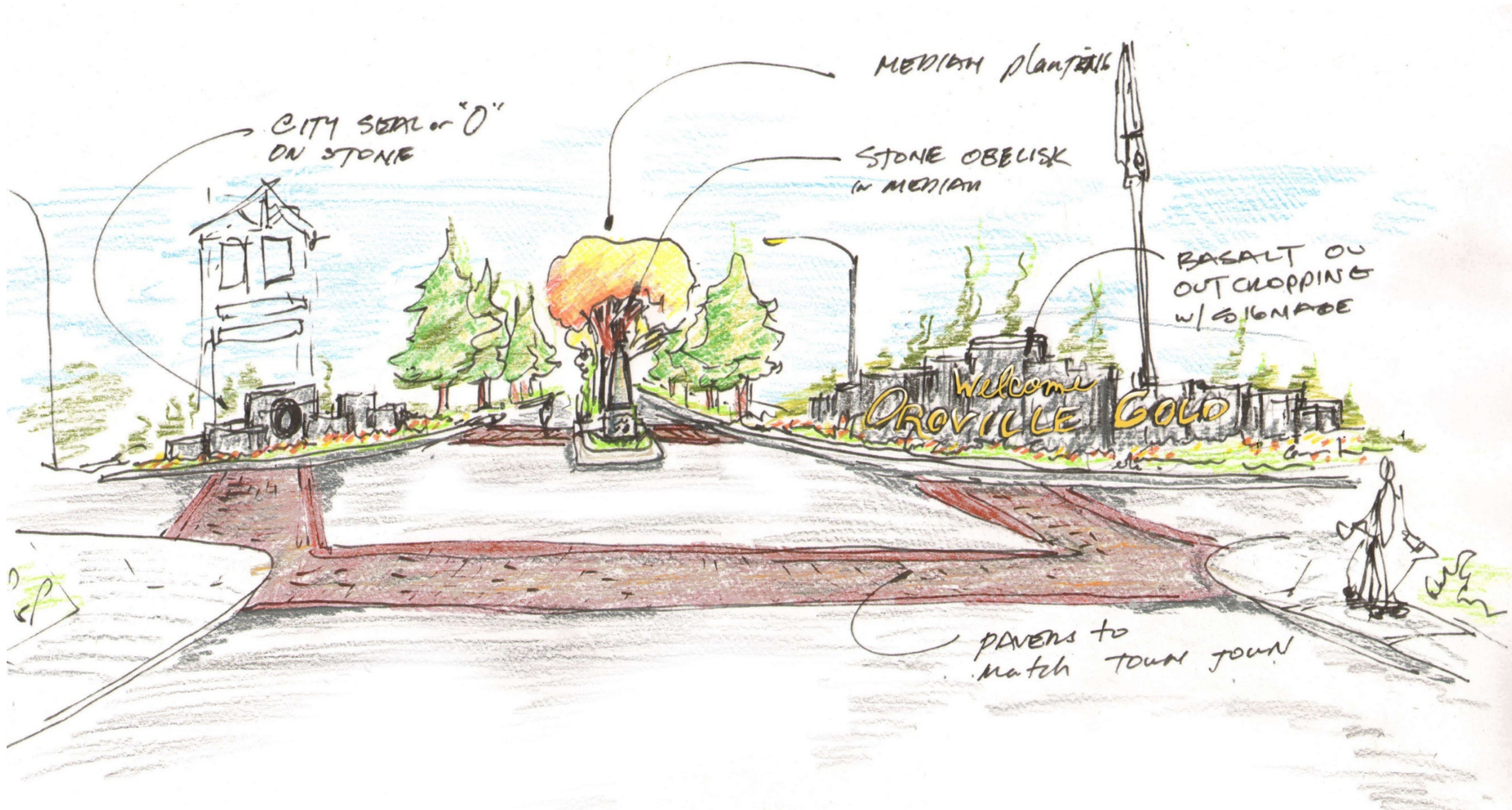




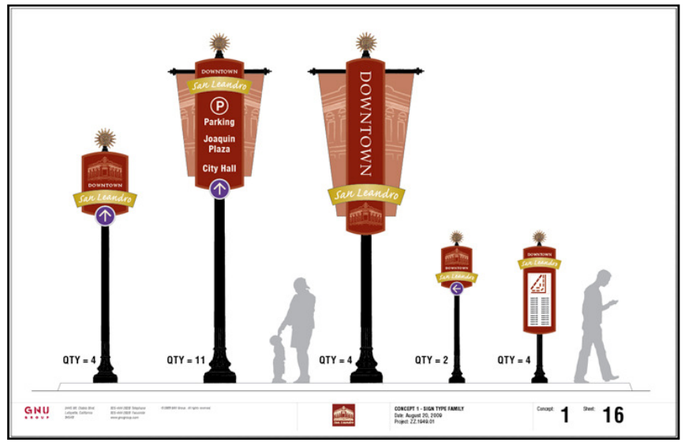
Columnar Framed Entry at Montgomery Street and Higway 70



Basalt Wall / Monument Sign Concept



Streetscape Design Elements



Street Furnishings & Amenities

The following specifications represent a sample of elements that could be utilized as a City of Oroville standard for streetscape restoration projects. A standard specification will help provide an identity to the City and a cohesive feel to public spaces. Public art can also help express a positive sense of identity and provide beautiful environments that invite interaction.

MLB310M BENCH MAGLIN™

BENCHES

MATERIALS
The MLB310M Bench
ends are made from solid cast aluminum. The seat employs flat bar straps and H.S. steel tube.

DIMENSIONS
Height: 30.75" (78.1cm)
Length: 70.00" (177.8cm)
Depth: 25.00" (63.5cm)
Seat: 17.00" (43.2cm)

FINISHES
All steel components are protected with E-Coat Rust Proofing. The Maglin Powdercoat System provides a durable finish on all metal surfaces.

INSTALLATION
Park Benches are delivered pre-assembled. Holes (0.5") are provided in each foot for securing to base.

RECYCLING/TRASH STATIONS

MATERIALS
The MRC202 Recycling Unit
frame is constructed using heavy duty steel flat bar. 20 imperial gallon commercial grade plastic liners and black molded ABS plastic lid is provided. A variety of labeling options are available.

DIMENSIONS
Height: 37.75" (96.0cm)
Width: 26.17" (66.5cm)
Depth: 42.87" (109.0cm)

FINISHES
All steel components are protected with E-Coat Rust Proofing. The Maglin Powdercoat System provides a durable finish on all metal surfaces.

INSTALLATION
Trash/Recycling Stations are delivered pre-assembled. Holes (0.5") are provided in each mounting foot for securing to base.

MRC202 RECYCLE UNIT MAGLIN™

MLP200 PLANTER MAGLIN™

PLANTERS

MATERIALS
The MLP200 Planters frame is constructed using heavy duty steel flat bar. A plastic liner is provided.

DIMENSIONS
Height: 24.00" (60.9cm)
Diameter: 25.00" (63.5cm)

FINISHES
All steel components are protected with E-Coat Rust Proofing. The Maglin Powdercoat System provides a durable finish on all metal surfaces.

INSTALLATION
Planters are delivered pre-assembled. Holes (0.5") are provided in each mounting foot for securing to base.

BIKE RACKS

MATERIALS
All parts of the MBR600 Series Bike Rack are made from H.S. steel tube and solid steel rod.

DIMENSIONS
Height: 34.70" (88.0cm)
Tube Diameter: 4.50" (11.5cm)

FINISHES
All steel components are protected with E-Coat Rust Proofing. The Maglin Powdercoat System provides a durable finish on all metal surfaces.

INSTALLATION
Bicycle Racks are delivered pre-assembled. Holes (0.5") are provided for securing to base.

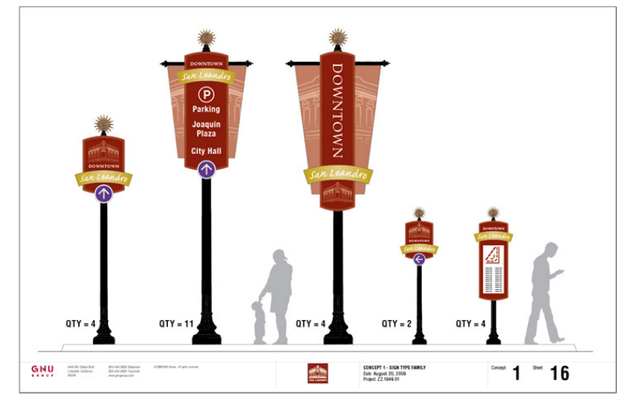
KIOSKS

MATERIALS
The MLK103 - 3 sided Kiosk is constructed using laser cut and H.S. steel frame. Three lockable indoor/outdoor signage display holders with 23" x 35" viewable areas are provided.

DIMENSIONS
Height: 83.87" (213.0cm)
Width: 39.00" (99.0cm)

FINISHES
All steel components are protected with E-Coat Rust Proofing. The Maglin Powdercoat System provides a durable finish on all metal surfaces.

INSTALLATION
Kiosks are delivered pre-assembled. Holes (0.5") are provided in each foot for securing to base.



WAYFINDING SIGNS & BANNERS

Existing wayfinding signs utilized by the City for places of interest such as the Greenline Tour, public parking and accessible paths of travel may be expanded to include new and historic features of the restored areas of the downtown area.

A standard format should be established to unify the different types of signs that could then be utilized throughout the City.

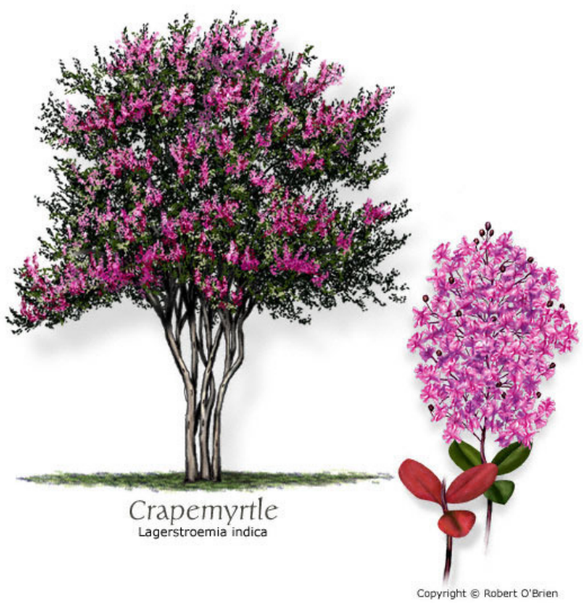
Street light banners could also be utilized to display holiday greetings, historic reverence and notice of upcoming special events.

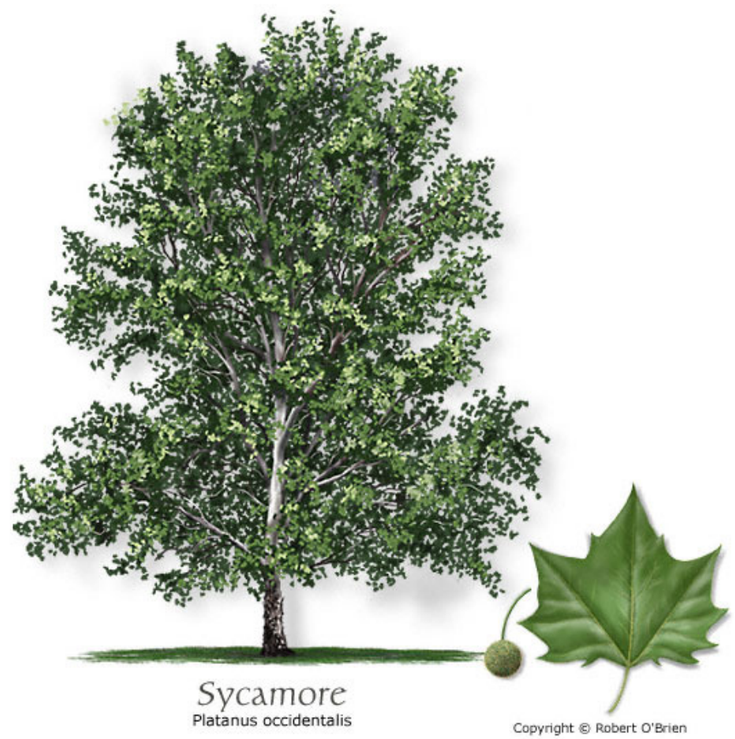
Landscaping

As described in the previous Street Furnishing and Amenities section; a standard specification for street trees and plant material will also help provide an identity to the City and a cohesive feel to public spaces.

The following tree species represent a profile that would work well with the restoration of Lincoln and Huntoon Streets, including the flowering Crape Myrtle that is currently used as an accent tree throughout the City, the native Sycamore tree and large shade trees with fall color such as the Red Maple, Ginkgo tree and the Chinese Pistache.

Street Trees





Chinese Pistache
Pistacia chinensis
Copyright © Robert O'Brien

Ginkgo
Ginkgo biloba
Copyright © Robert O'Brien

Conclusion

The City of Oroville is a burgeoning community with attractive natural resources and opportunities for growing commerce. It has been exciting to see the City and local agencies invest in recent plans for future improvements.

- Feather River Boulevard Revitalization
- Gateway Mixed Use Development
- Arts, Culture and Entertainment District
- Municipal Auditorium
- Potential Historic Downtown Business District
- Lincoln and Huntoon Streets Restoration
- Feather River Salmon Preservoir
- Veterans Memorial Park
- Existing Walmart Re-use
- New Super Walmart
- The MIDAS Program

The revitalization of Feather River Boulevard is an important link in this set of improvements. The length of the proposed revitalization is the primary frontage to the City's core, as visitors drive into town along Highway 70. It's also framed by the two most traveled gateways to the City at Montgomery Street and Oroville Dam Boulevard.

Although this plan addresses the primary gateway to the City at Montgomery Street, another gateway should be considered at Oro Dam Blvd between Hwy 70 and Feather River Blvd.

As the frontage road, Feather River Blvd offers opportunities for future business and developers. There are current interests in developing the two large properties that frame the Revitalization area. Street improvements in these areas and the rest of the boulevard will attract more investors to develop empty parcels, which will in turn bring more visitors to Oroville, attract travelers on Hwy 70 and revitalize the neighborhood.

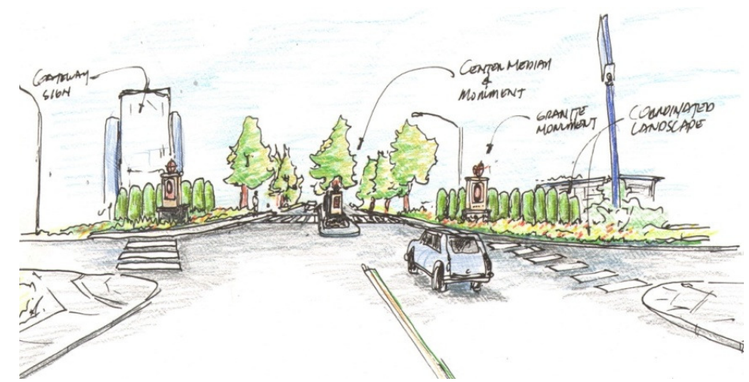
The existing street section and stop control along Feather River Blvd mostly promotes the primary use of the street for automotive travel. There are no designated bike facilities and although sidewalks are provided on a majority of the street frontage, there are gaps such that the sidewalk is not continuous along the street. There is no stop control for north and southbound traffic or any crosswalk designations between Montgomery Street and Oroville Dam Blvd.

With the addition of stop control and crosswalks, the street will become much more pedestrian friendly and be more utilized by the adjacent residential neighborhood. The installation of a center landscape median will also provide a safe haven for pedestrian crossing. It will slow down traffic by tightening lane width and provide an aesthetically pleasing feel to the street as a tree lined boulevard.

The Revitalization Plan proposed two lane street section with bike lanes, landscape medians and detached sidewalks where possible will cater to all potential users of the street, including bicyclists, public transportation vehicles and riders and pedestrians of all ages and abilities. The two lane street section will adequately handle future traffic loads as projected by the City of Oroville 2030 General Plan and existing utilities are adequate for existing properties and proposed street improvements.

The City is also encouraged to work with deep lot property owners on the Hwy 70 side of the Feather River Blvd to incorporate shared access easements to attract more businesses to invest in more accessible properties visible from Hwy 70.

With streetscape and traffic improvements in place, the City will enhance pedestrian safety, bring continuity to the boulevard and connect with the adjacent neighborhood. It will create a more vibrant experience that will attract new business, appeal to the community and promote tourism.



Appendix

Appendix A Master Map of the City of Oroville Storm Drainage
Appendix B Master Map of the City of Oroville Sanitary Sewer System
Appendix C Pacific Gas & Electric - Electric Distribution Map G2319
Appendix D Pacific Gas & Electric - Electric Distribution Map G2324
Appendix E Pacific Gas & Electric - Electric Distribution Map G2323
Appendix F Pacific Gas & Electric - Gas Distribution Map 1909E2
Appendix G Pacific Gas & Electric - Gas Distribution Map 1909E1

MAP 3

MAP 7

MAP 9

MAP 13

FEATHER RIVER

FISH HATCHERY

FEATHER RIVER BLUFFS

BEDROCK PARK

ROTARY PARK

SANK PARK

HARRISON STADIUM

PLAYTOWN U.S.A.

HEWITT PARK

CENTRAL SCHOOL

STORM DRAIN DETENTION POND

K-MART SD-137

SD-198, SD-200
OROVILLE STORM
DRAIN MASTER PLAN

CITY LIMITS

INDEX MAP NO SCALE

N

SCALE 1" = 400'

LEGEND

- MANHOLE
- MANHOLE BOX
- DROP INLET (SQUARE or RECTANGLE)
- DROP INLET (CIRCLE TYPE)
- 12" STORM DRAIN LINE & SIZE
- SD-110 RELATED REFERENCED DRAWINGS
- OPEN DITCH (5' WIDE BOTTOM or LESS)
- OPEN DITCH (5' WIDE BOTTOM or LARGER)

(SS-182) DRAWER "E" MISCL. PLATS

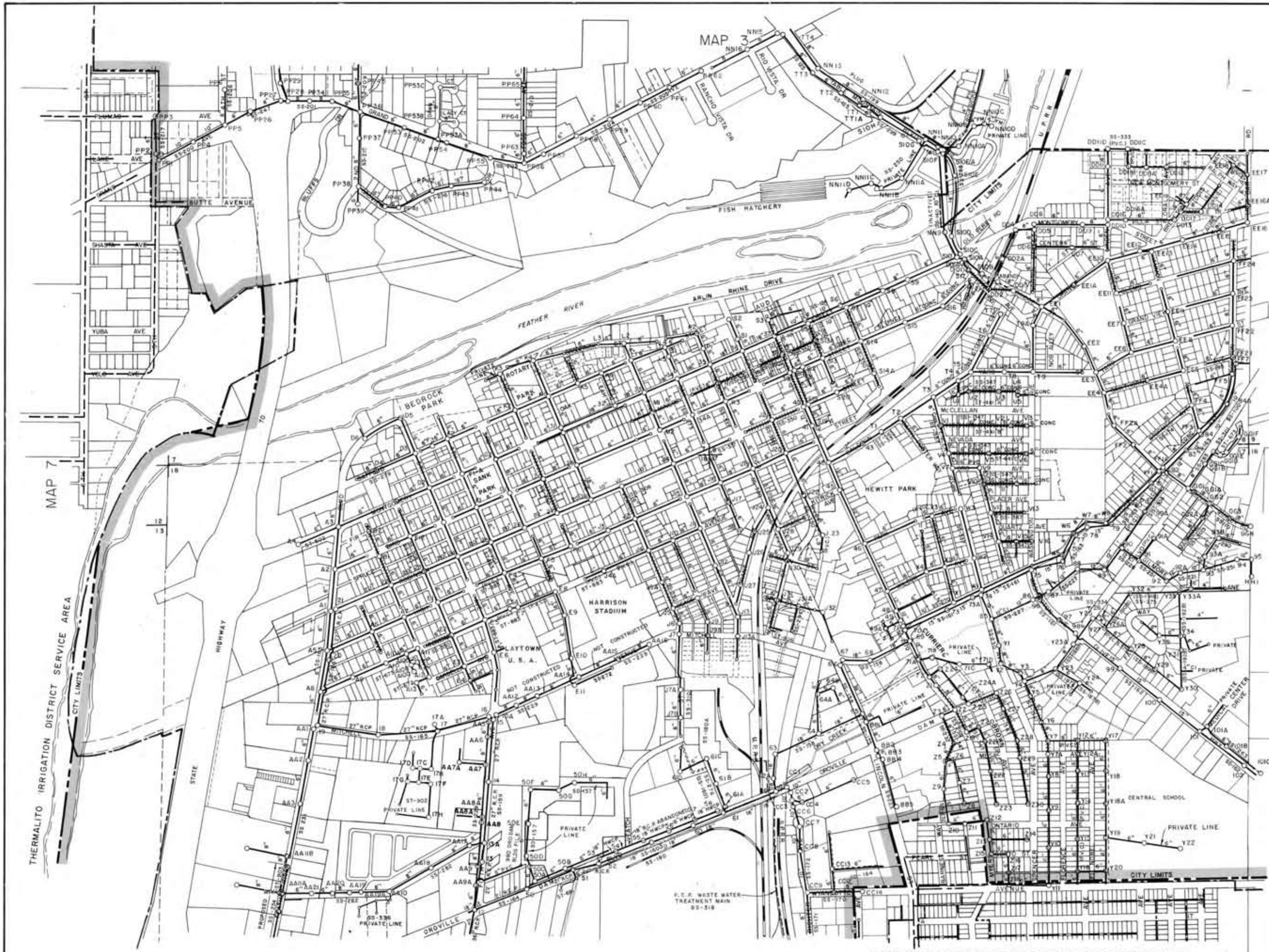
MASTER MAP of
CITY OF OROVILLE

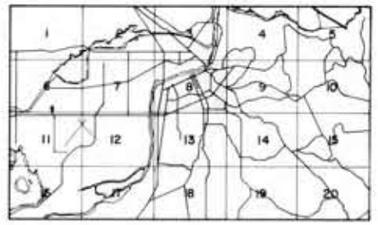
APPENDIX A

STORM DRAINAGE

REVISIONS
6-80 6-93
10-80 12-86
12-80
1-81
3-82
11-85
8-88
10-89
9-91

DRAWN BY	APPROVED BY	DATE	SHEET M8
T.F.	DIRECTOR OF PUBLIC WORKS		OF





INDEX MAP NO SCALE

SCALE 1" = 400'

SANITARY SEWER MANHOLE NUMBERS

I2	THRU	95	
A1	THRU	A13	
B1	THRU	B2	
D1	THRU	D6	
E1	THRU	E12	
F1	THRU	F2	
G1	THRU	G2	
I1			
J1	THRU	J32	
K1	THRU	K6	
L1	THRU	L5	
M1	THRU	M2	
P1	THRU	P1	
R1	THRU	R4	
S1	THRU	S17,19,20	
T1	THRU	T9	
U1	THRU	U5	
V1	THRU	V16	
W1	THRU	W3,5,6	
X1	THRU	X4	
Y1	THRU	Y22	
Z1	THRU	Z30	
AA1	THRU	AA21	
BB1	THRU	BB5	
CC1	THRU	CC9,12,13,14	
DD1	THRU	DD17	
EE1	THRU	EE19	
FF1	THRU	FF5,7	
FF21	THRU	FF24	
GG1	THRU	GG4	
NN9	THRU	NN13	
PP1	THRU	PP6	
PP26	THRU	PP29	
PP34	THRU	PP45	
PP53	THRU	PP65	
TT1	THRU	TT4	

SEWER RELINE PROJECT

(P.V.C.) NEW P.V.C. SEWER LINE

(SS-1918) DRAWER "G" MISCL. PLATS

T.I.D. SANITARY SEWER SYSTEM

LAKE OROVILLE AREA PUBLIC UTILITY DISTRICT SANITARY SEWER SYSTEM

CITY OF OROVILLE SERVICE AREA BOUNDARY

(LOWER END)
DOWN TOWN AREA

CITY OF OROVILLE, CALIFORNIA

MASTER MAP of CITY OF OROVILLE

APPENDIX B

SANITARY SEWER

REVISIONS
6-30 9-92
10-80 9-93
12-80 9-96
1-81 3-99
5-82
11-82
8-88
8-90
1-91

DRAWN BY	APPROVED BY	DATE	SHEET
T.F.	DIRECTOR OF PUBLIC WORKS		M8 OF

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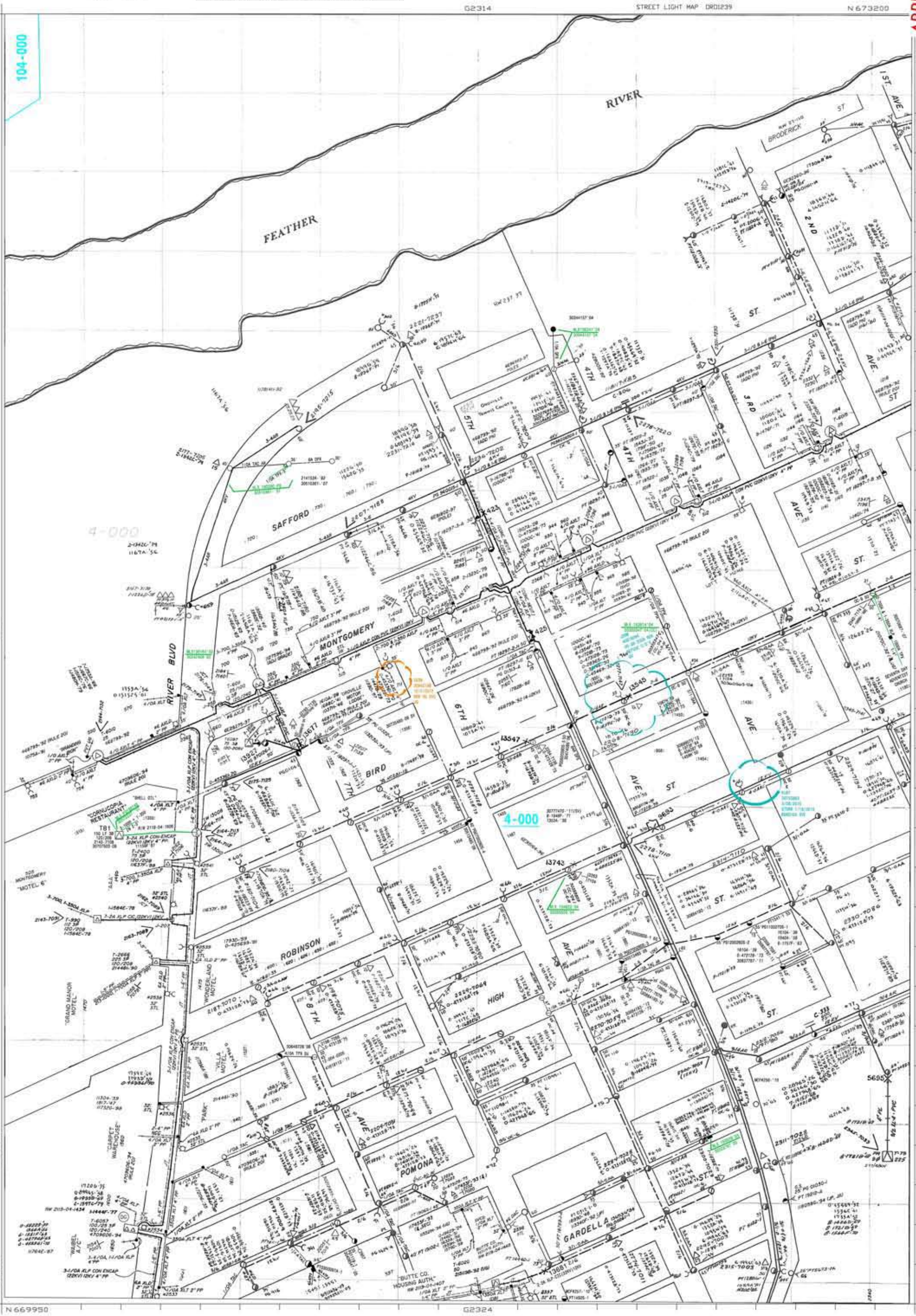
PACIFIC GAS & ELECTRIC COMPANY
NORTH VALLEY DIVISION
BUTTE COUNTY

ELECTRIC DISTRIBUTION MAP
SCALE 1" = 101 ZONE 2

DRAWN 10/15/1962
CIRCUIT MAP CC0602A
STREET LIGHT MAP DRD1239
DATE PRINTED 11/2/2012
DRD

G2319
190902

APPENDIX C



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PACIFIC GAS & ELECTRIC COMPANY
NORTH VALLEY DIVISION
BUTTE COUNTY

ELECTRIC DISTRIBUTION MAP
SCALE 1" = 101 ZONE 2

DRAWN 9/6/1962
CIRCUIT MAP
STREET LIGHT MAP

DATE PRINTED 11/5/2012 DRD
CC0602A

G2324
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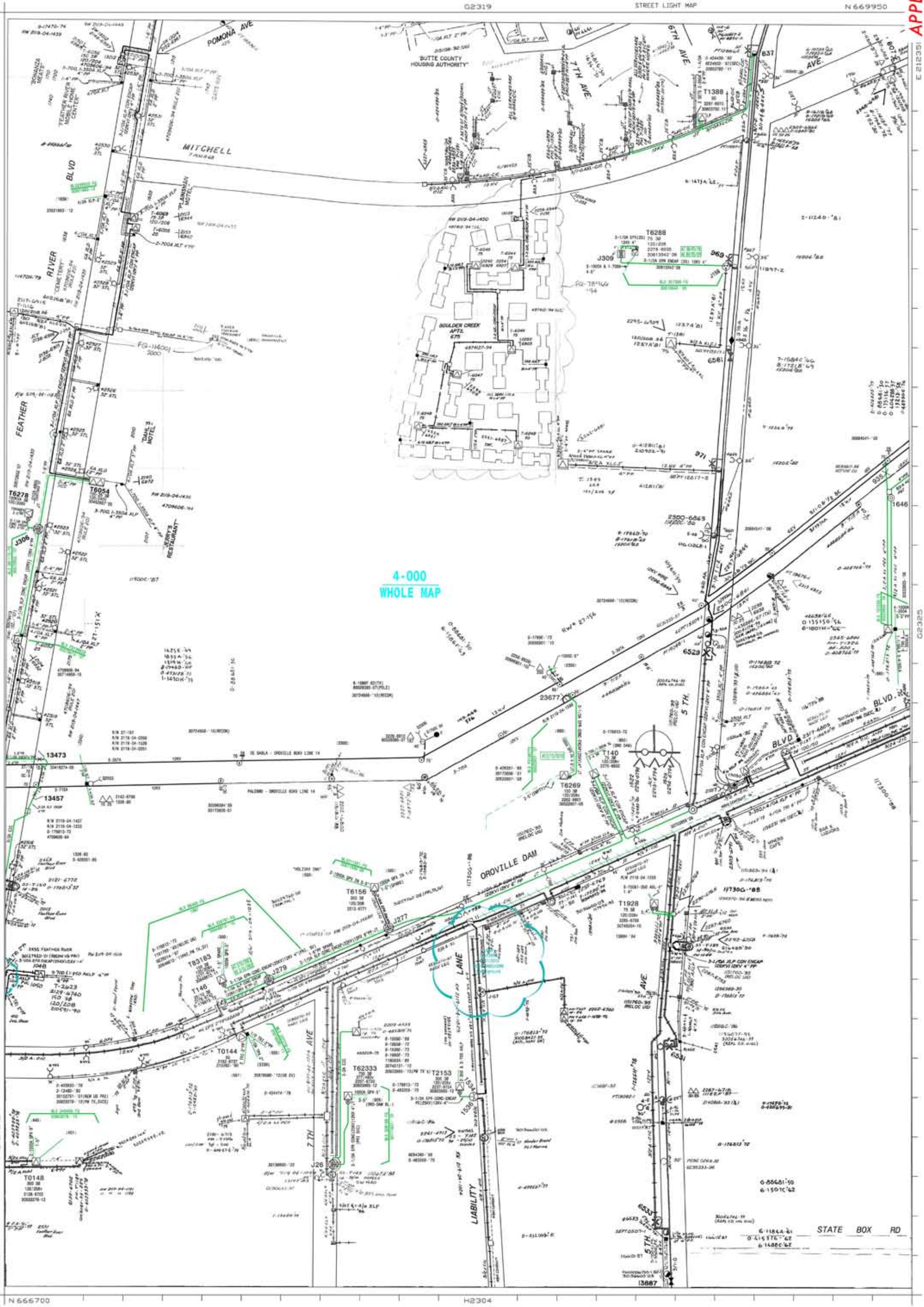
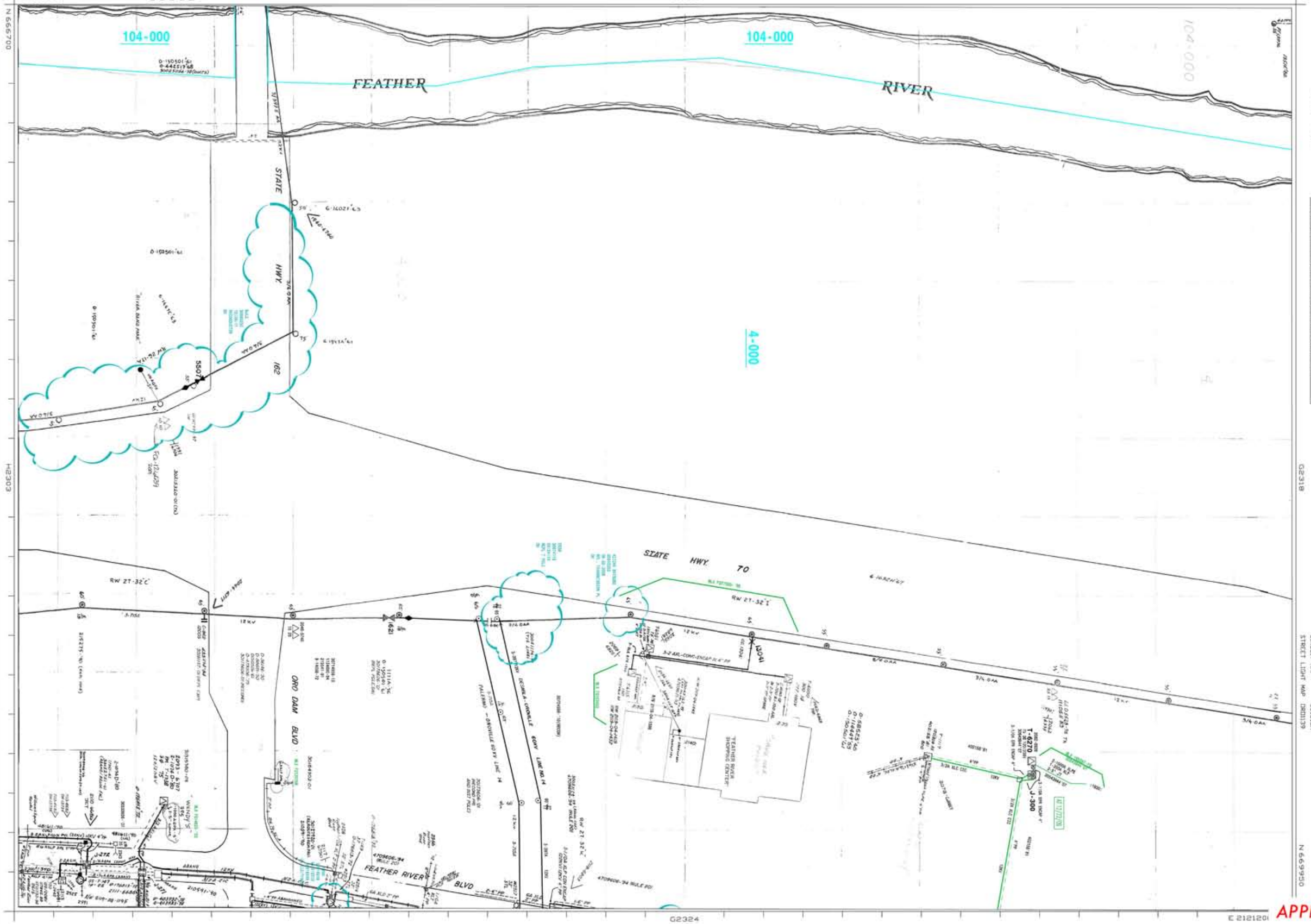
APPENDIX D

G2319

N 669950





PACIFIC GAS & ELECTRIC COMPANY
NORTH VALLEY DIVISION
BUTTE COUNTY

ELECTRIC DISTRIBUTION MAP
SCALE 1" = ### ZONE 2

G2318

DRAWN 10/15/1962
CIRCUIT MAP CD6002A
STREET LIGHT MAP DR01139

DATE PRINTED 3/12/2010
DRD

N 669950

G2323
190961

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APPENDIX E

PACIFIC GAS & ELECTRIC COMPANY
NORTH VALLEY DIVISION

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GAS DISTRIBUTION MAP
SCALE 1" = 100 ZONE 2

BLOCK NEXT IS 22
DATE PRINTED 7/20/2010 RGL
DRAWN 11/21/1963

1909E2
G2324

APPENDIX F

E 2118900
1909E1
838061
N 666700
104-000
FEATHER
RIVER
ORO DAM
BLVD WEST (STATE)
4-000
4 STATE
5
HWY-70
(HWY-162) ORO DAM BLVD
FEATHER RIVER
BLVD.
1909F1
1909D1
1909E2
E 212120
N 669950
PACIFIC GAS & ELECTRIC COMPANY
NORTH VALLEY DIVISION
COUNTY
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GAS DISTRIBUTION MAP
SCALE 1" = 100 ZONE 2
BLOCK 6
DATE PRINTED 04/20/06 RGL
DRAWN 11/27/1963
1909E1
G2323

APPENDIX G