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HOLLISTER AVENUE CLASS I BIKE PATH / MULTI-USE PATH PROJECT UPDATE

Teresa Lopes,
Sr. Project Engineer

June 7, 2016

Project Schedule

- Project Design Complete – June/July 2016
- Advertise for Bids – July 2016 – Coming to Council June 21 for authorization to bid
- Construction Contract Award – September 6, 2016
- Begin Construction – October 2016
- Construction Complete – Early 2017 (Construction estimated to last 4-5 Months)

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Project Scope of Work

- Construct a Separated Class I Bike Path/Multi-Use Path along the south side of Hollister Avenue
- Add a landscaped buffer between the Class I Bike Path and Hollister Ave
- Shift traffic lanes to the north reducing width of existing traffic lanes
- Reconstruct existing raised medians
- Modify existing signals at Pacific Oaks, Entrance Rd, and Ellwood School to accommodate shifted lanes
- Pavement Rehabilitation on Hollister Ave from Pacific Oaks to Via Jero

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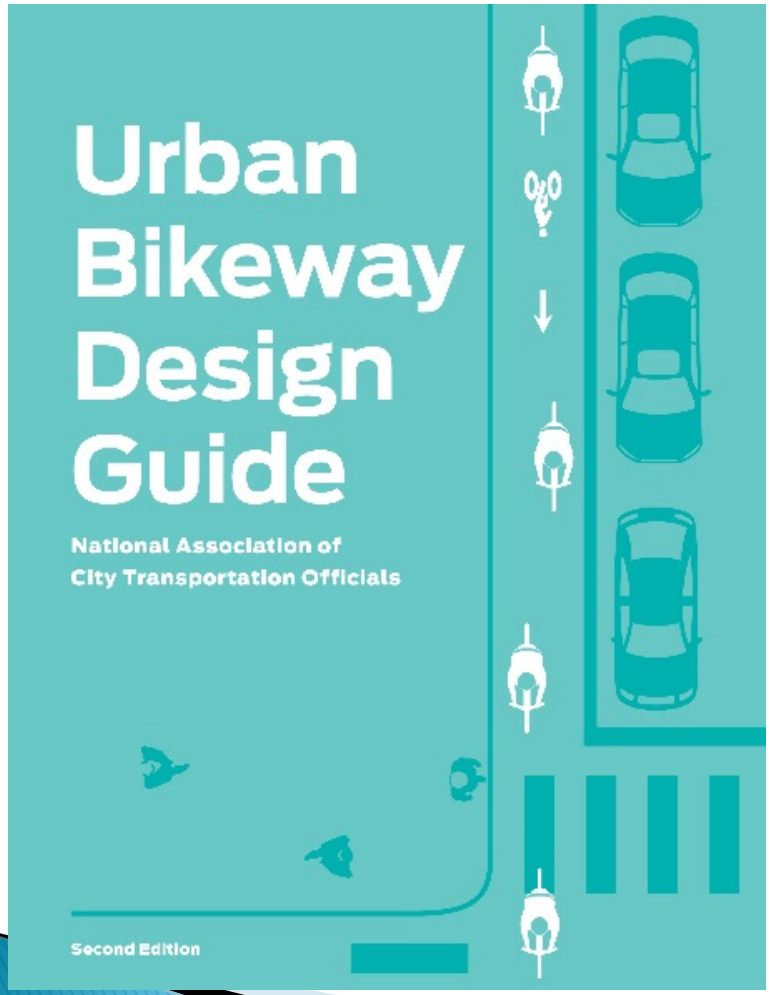
Innovative Design

- Use of Newly Developed Design Guidelines (2014 – 2016)



- April 2014 – Caltrans Endorses NACTO Innovative Street Design Guides to Promote Biking and Walking

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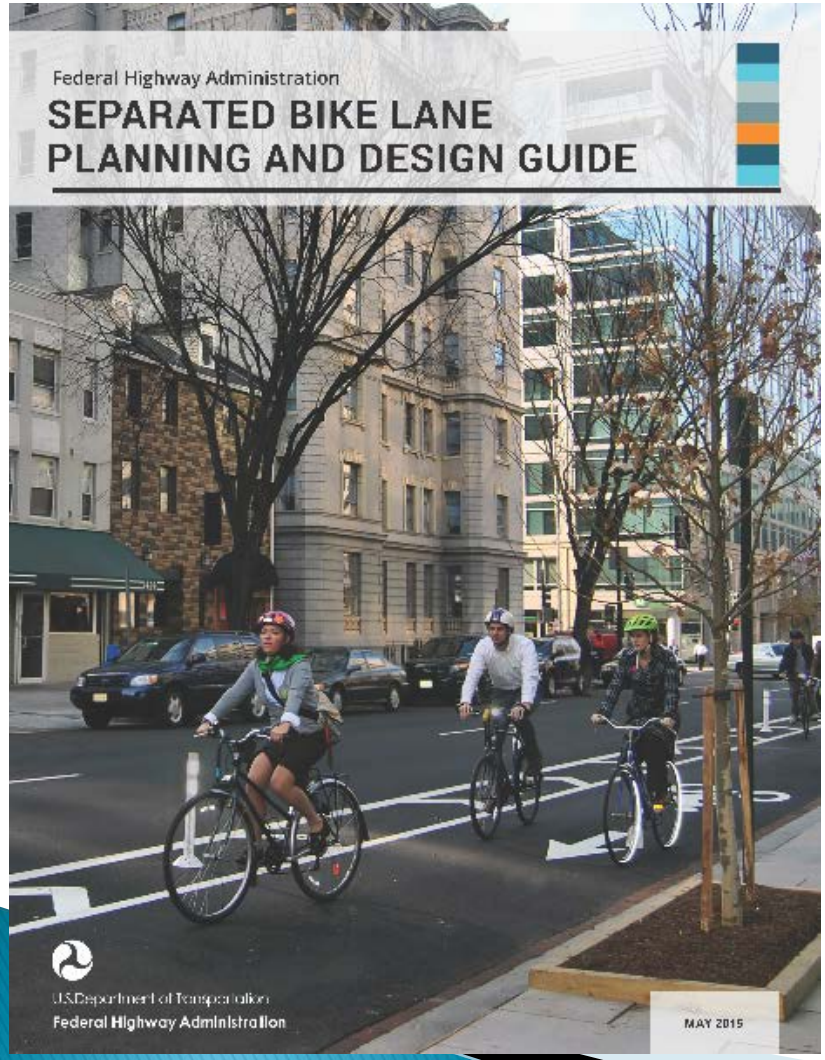
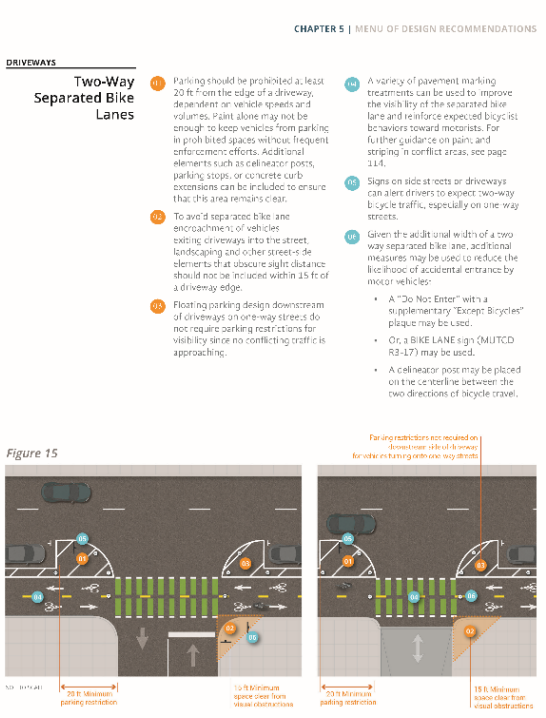
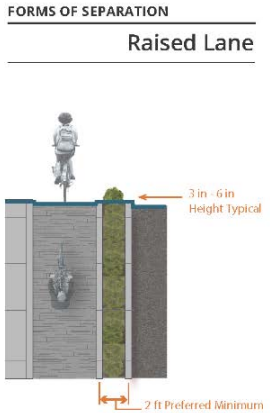
- FHWA – Separated Bike Lane Planning and Design Guide – May 2015







Cambridge, MA. (Source: City of Cambridge)

Innovative Design

- Caltrans Bikeway Guidance (Separated Bikeways/Cycle Tracks) – December 30, 2016

DESIGN INFORMATION BULLETIN NUMBER 89

Department of Transportation
Division of Design
Office of Standards and Procedures

CLASS IV BIKEWAY GUIDANCE
(Separated Bikeways / Cycle Tracks)

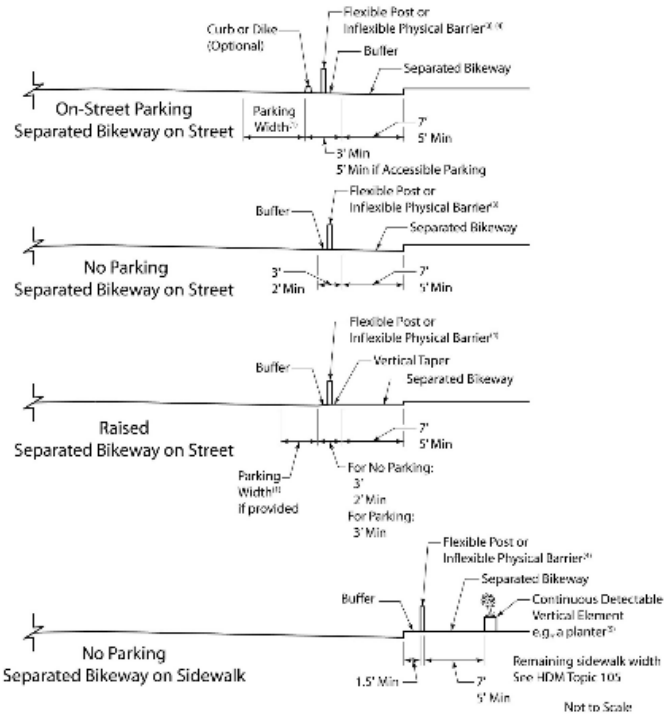
APPROVED BY:

TIMOTHY L. CRAGGS
DIVISION CHIEF
DIVISION OF DESIGN

for THOMAS P. HALLENBECK
DIVISION CHIEF
DIVISION OF TRAFFIC OPERATIONS

December 30, 2015

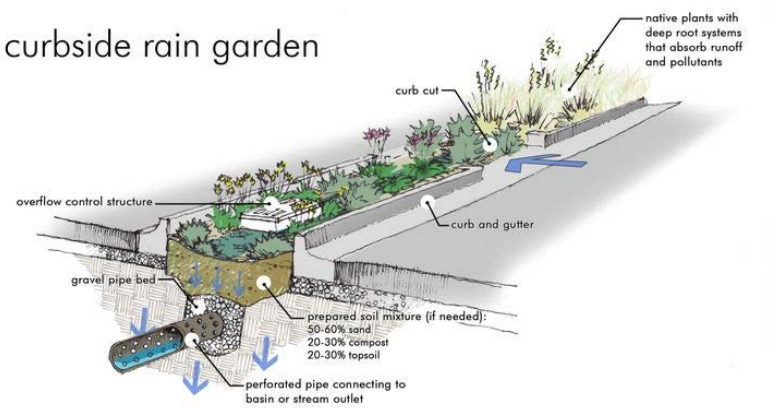
Figure 3.0
Typical Class IV Bikeway (Separated Bikeway) Cross Sections

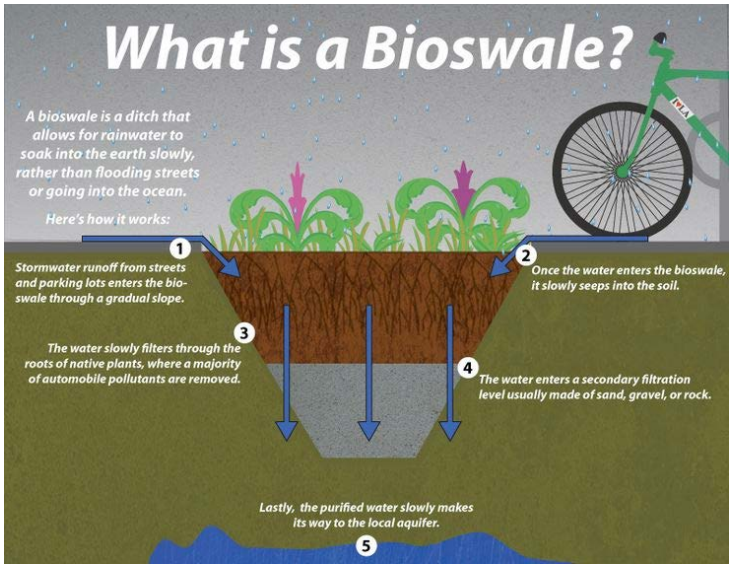


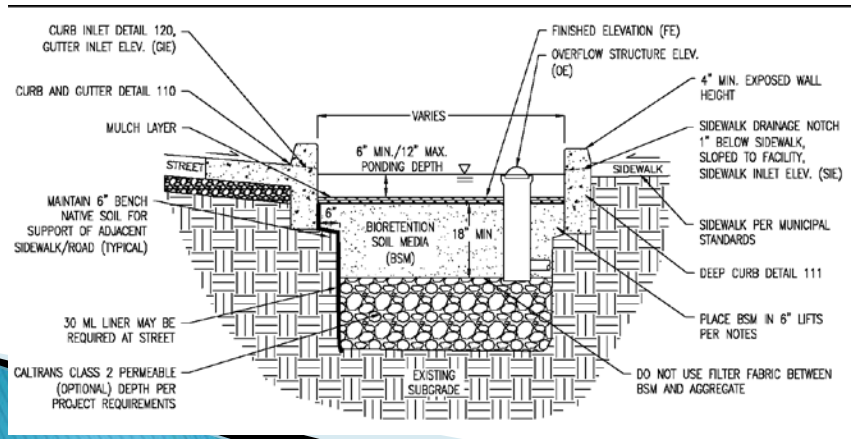
NOTES:
(1) See CA MUTCD Section 3B.19.
(2) For separated bikeway marking guidance, use the bicycle lane symbol marking per CA MUTCD Figure 9C-3 Option A.
(3) May be a raised island in lieu of flexible posts or inflexible physical barriers.
(4) Flexible posts or inflexible physical barriers may be omitted.
(5) Periodic openings should be provided for bicyclists to access buildings.

Innovative Design

- Use of Low Impact Development (LID) Components -







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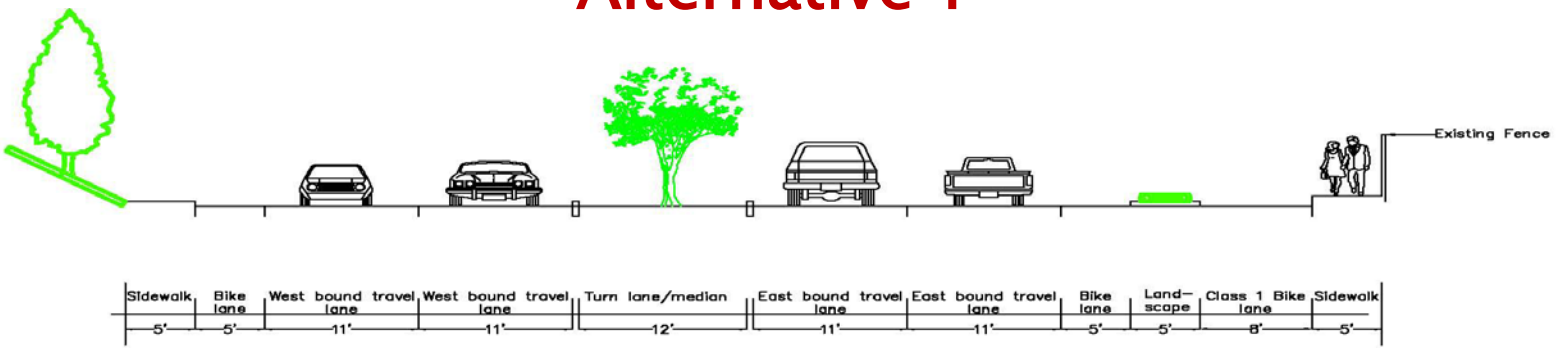
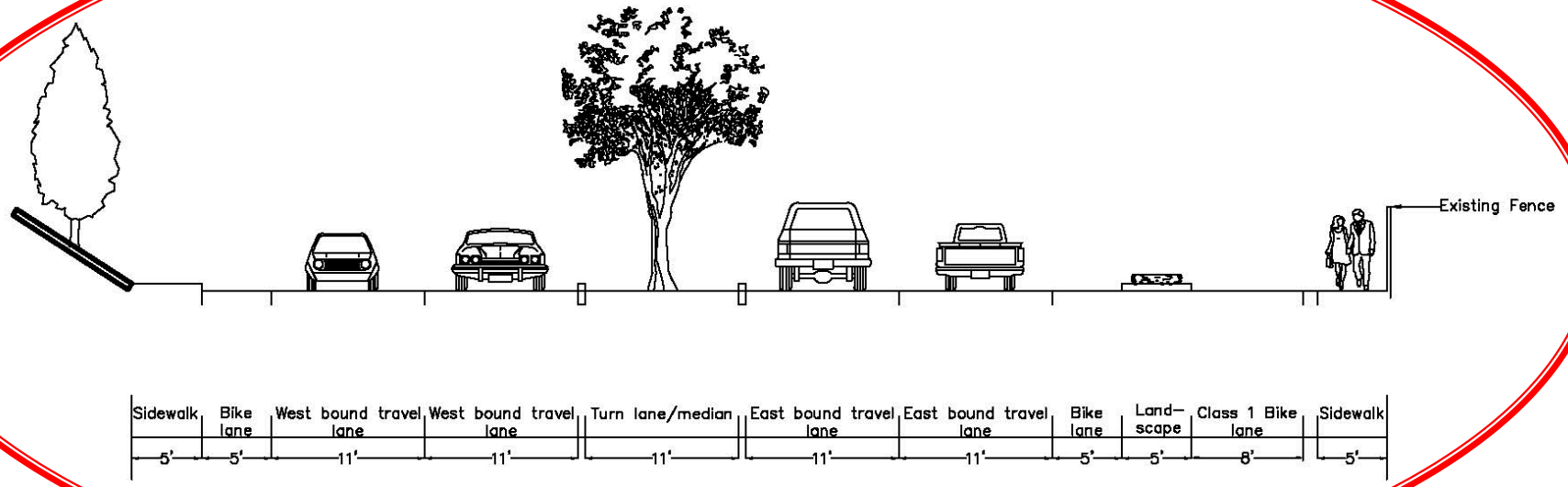
Preferred Alternative – Typical Section

Alternative 1



Alternative 2



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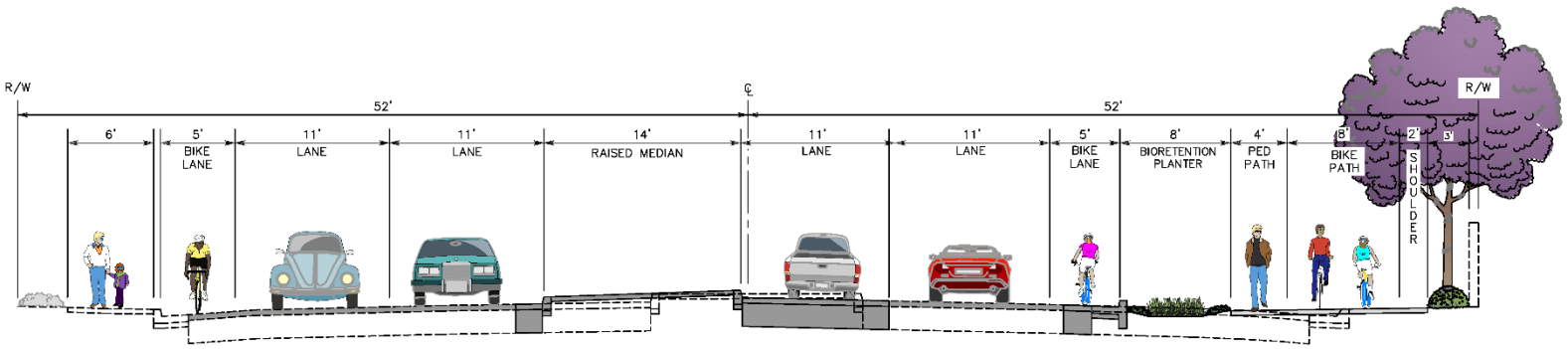
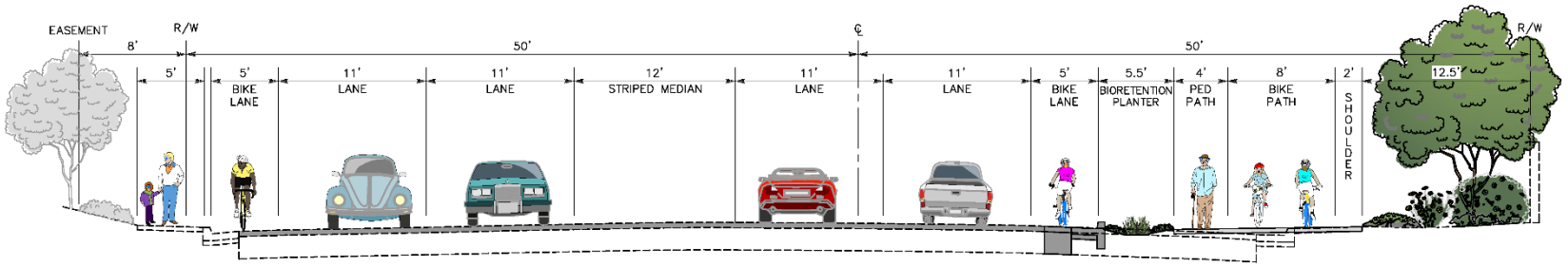
Final Design – Typical Section



HOLLISTER AVE - TYPICAL SECTION
FROM ENTRANCE ROAD TO END OF PROJECT
NO SCALE



HOLLISTER AVE - TYPICAL SECTION
FROM BEGINNING OF PROJECT TO ENTRANCE ROAD
NO SCALE

HOLLISTER AVE
CLASS I BIKE/PEDESTRIAN IMPROVEMENTS

APRIL 2016
SHEET 2 OF 4

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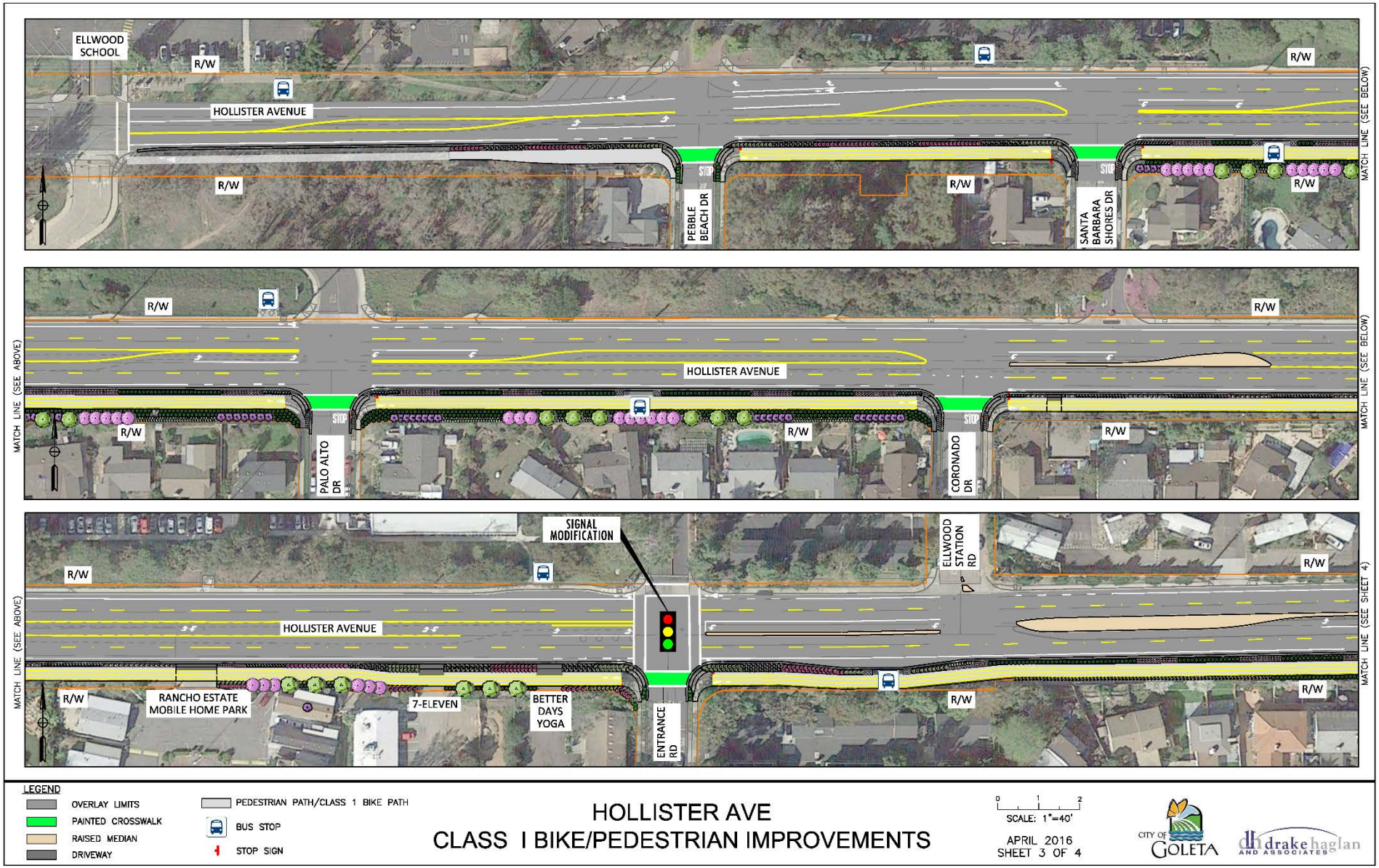
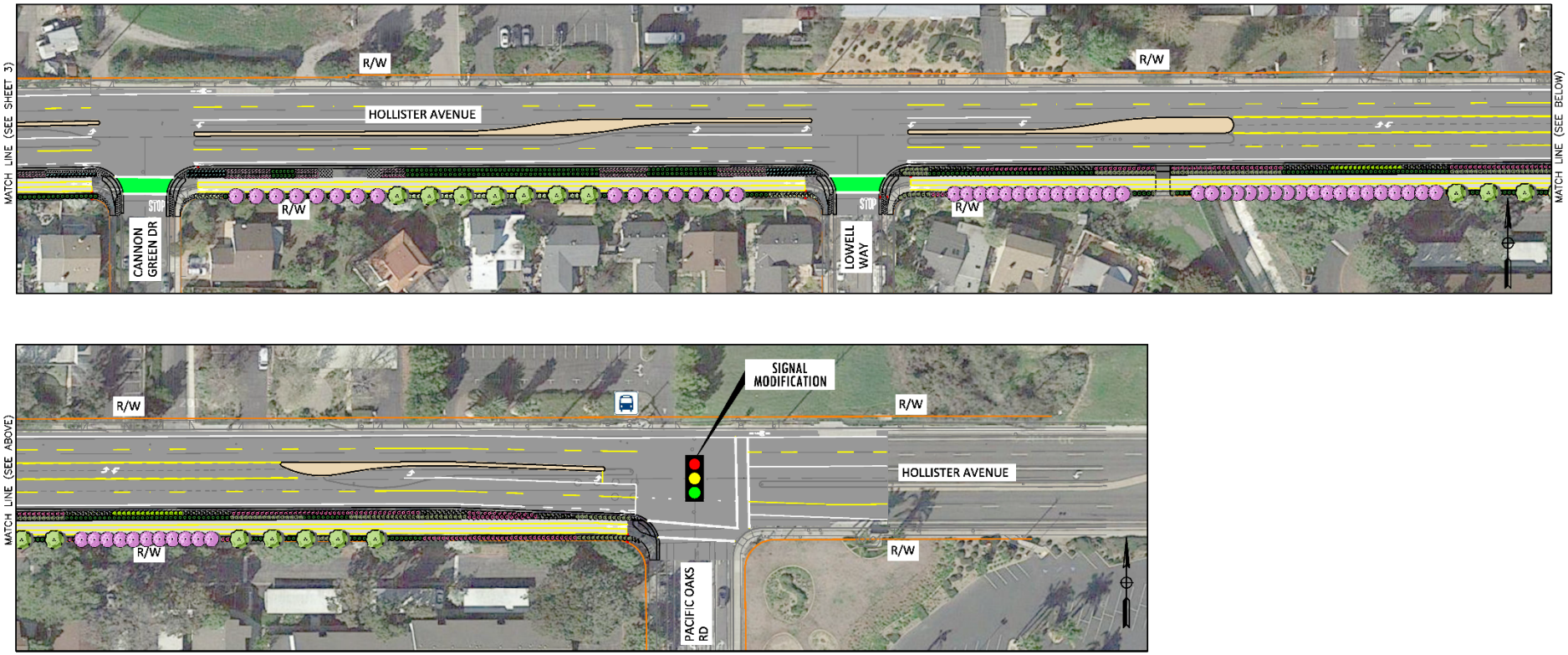
drake haglan AND ASSOCIATES

Final Design – Layout



Final Design – Layout



LEGEND

- OVERLAY LIMITS
- PAINTED CROSSWALK
- RAISED MEDIAN
- DRIVEWAY
- PEDESTRIAN PATH/CLASS 1 BIKE PATH
- BUS STOP
- STOP SIGN

HOLLISTER AVE
CLASS I BIKE/PEDESTRIAN IMPROVEMENTS

SCALE: 1"=40'

APRIL 2016
SHEET 4 OF 4

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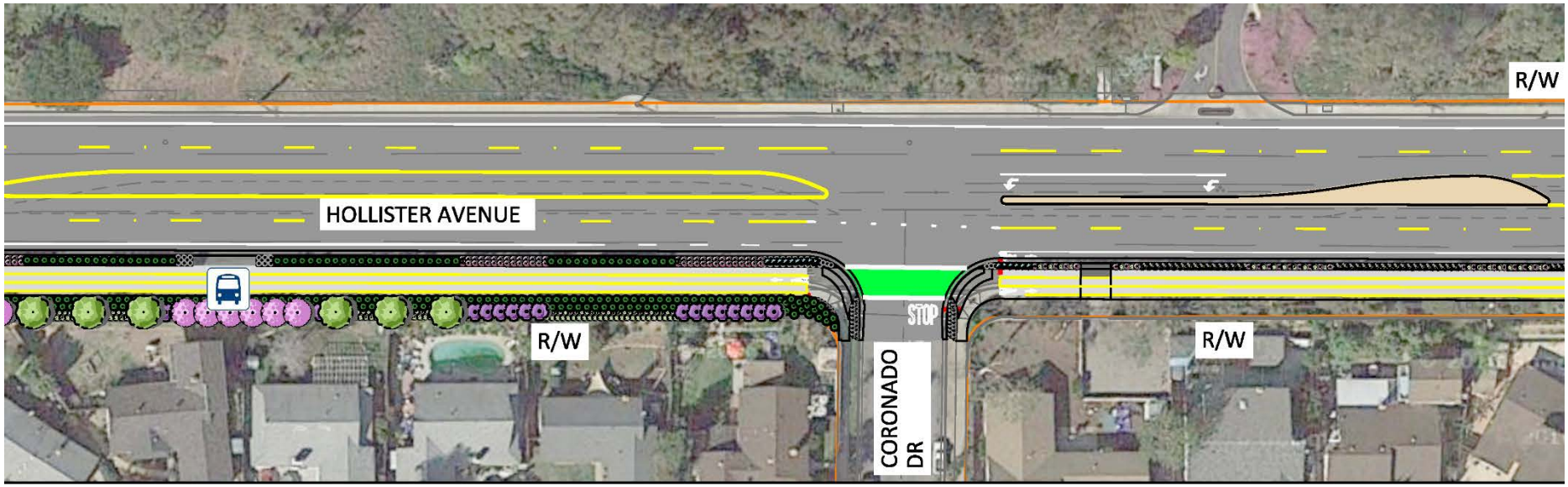
drake haglan AND ASSOCIATES



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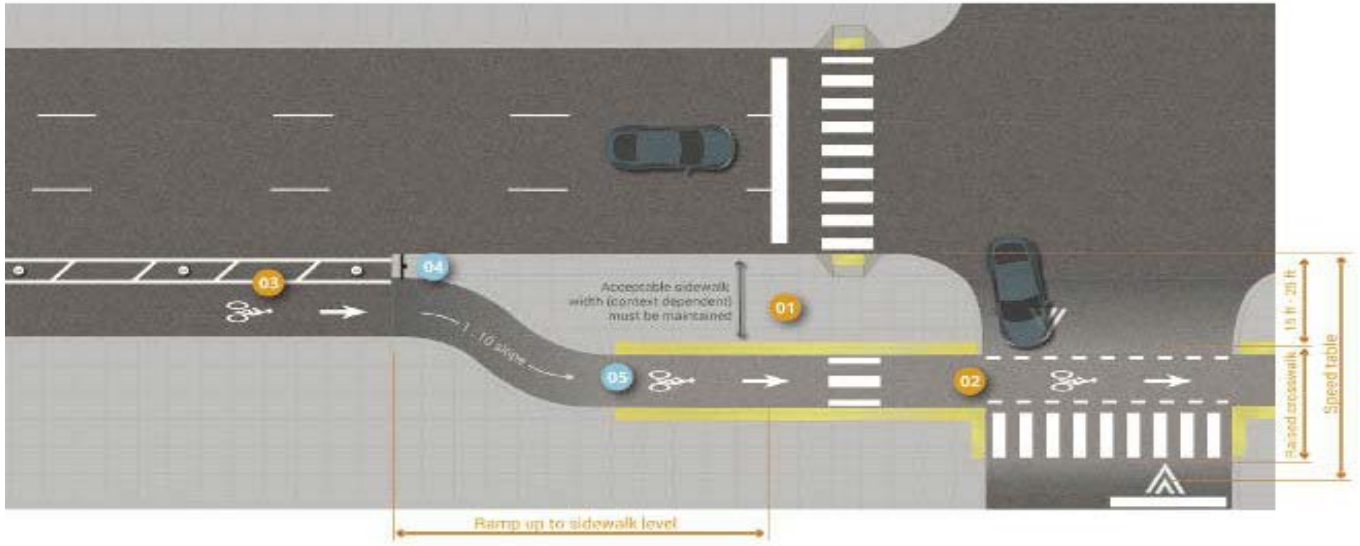
INTERSECTION CROSSING –BEND OUT DESIGN



TYPICAL BEND OUT DESIGN – FHWA Separated Bike Lane Planning Design Guide

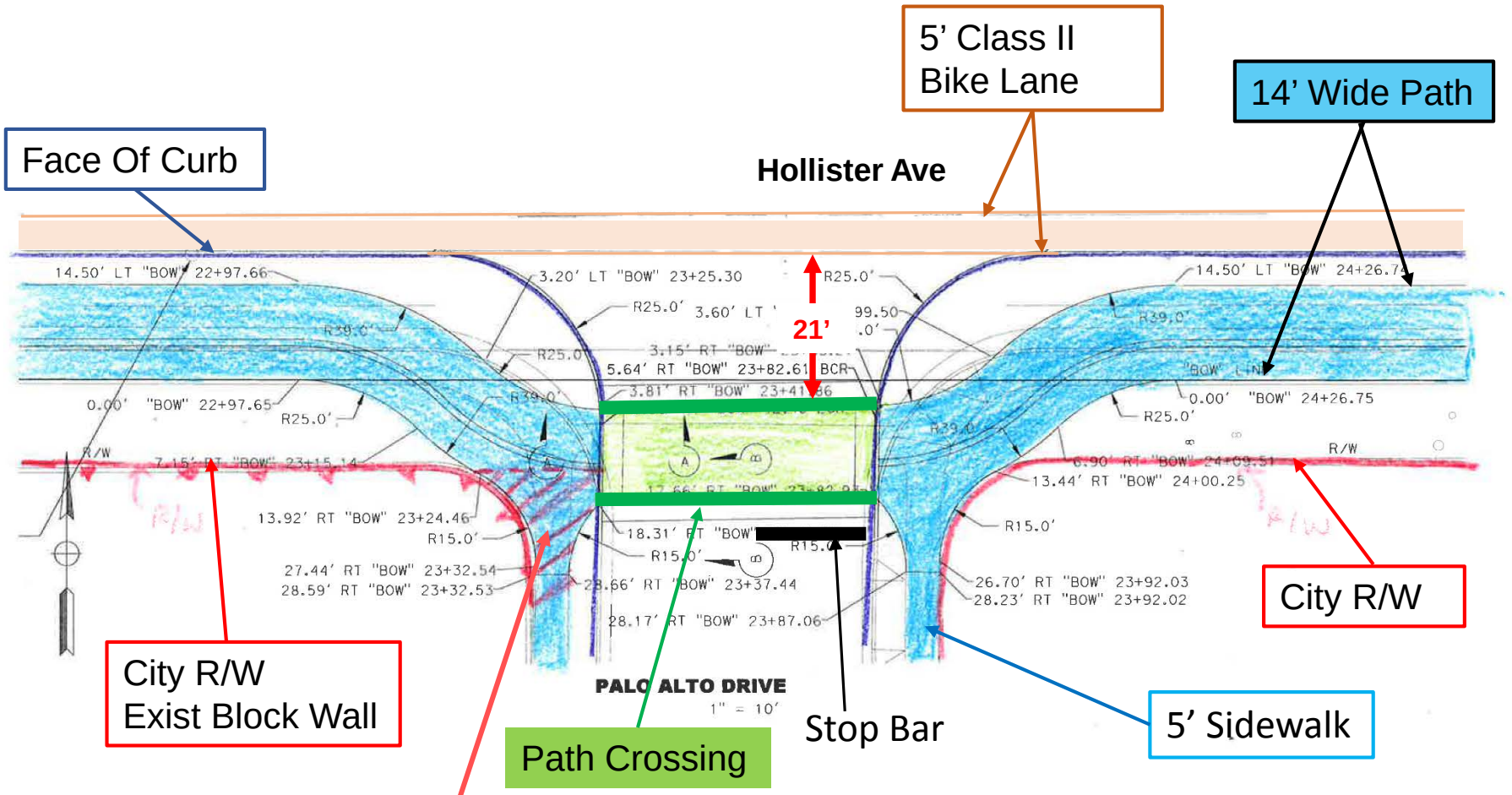
WHY USE A BEND OUT DESIGN?

- Positions bicyclists and pedestrians downstream on the side street away from the intersection, **allowing vehicles to complete turning movements before interacting with bicyclists/peds**.
- Used for lower-volume streets or driveways
- Provides space for a vehicle to yield to crossing bicycles/pedestrians **without blocking through traffic**
- Use depends on buffer type, width, **available right of way**, **sight distance, side-street characteristics**, and other contextual factor

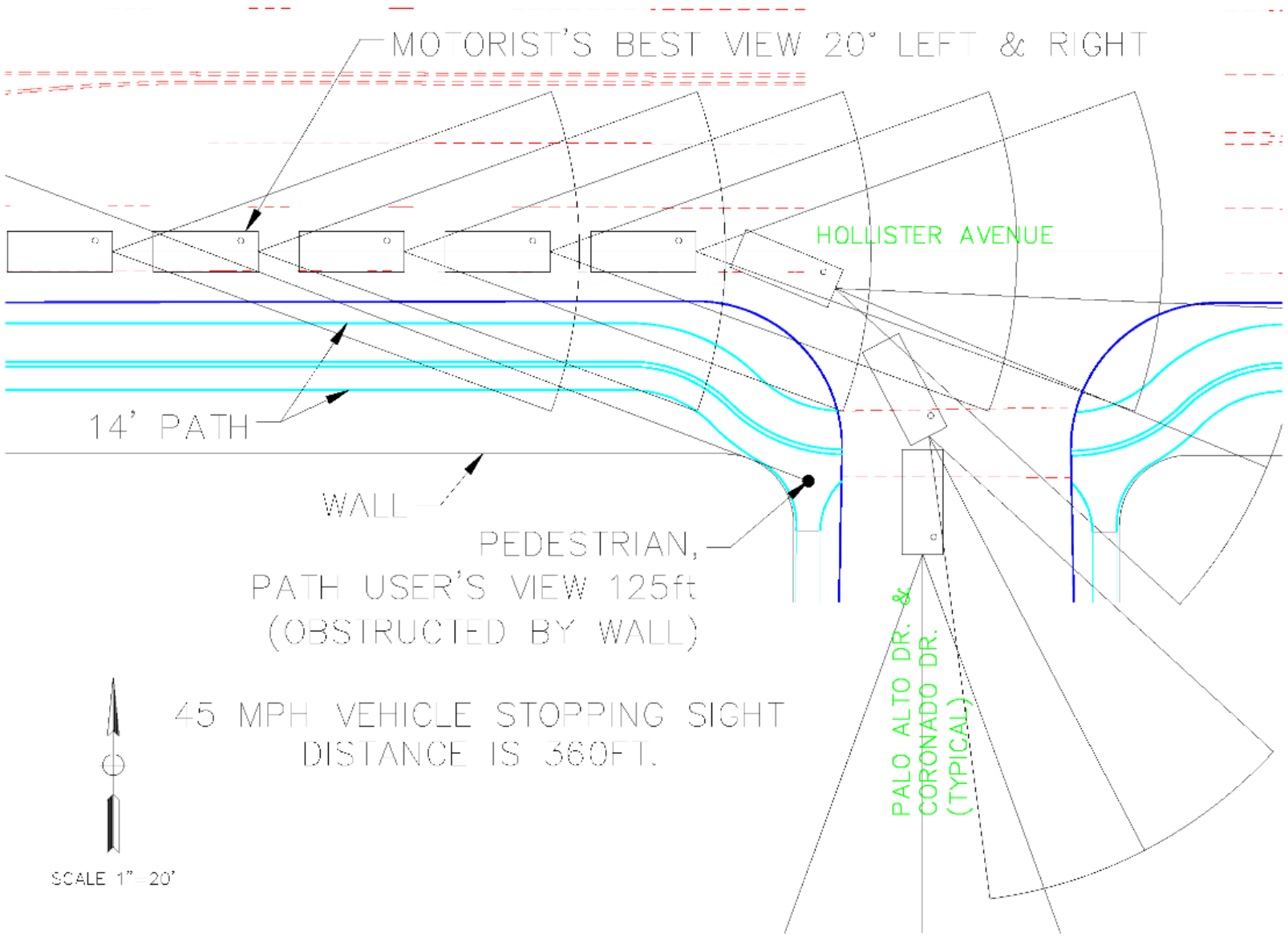
INTERSECTION CROSSING –BEND OUT DESIGN

Example of a Ideal Bend Out Design
El Colegio Road at Embarcadero del Mar

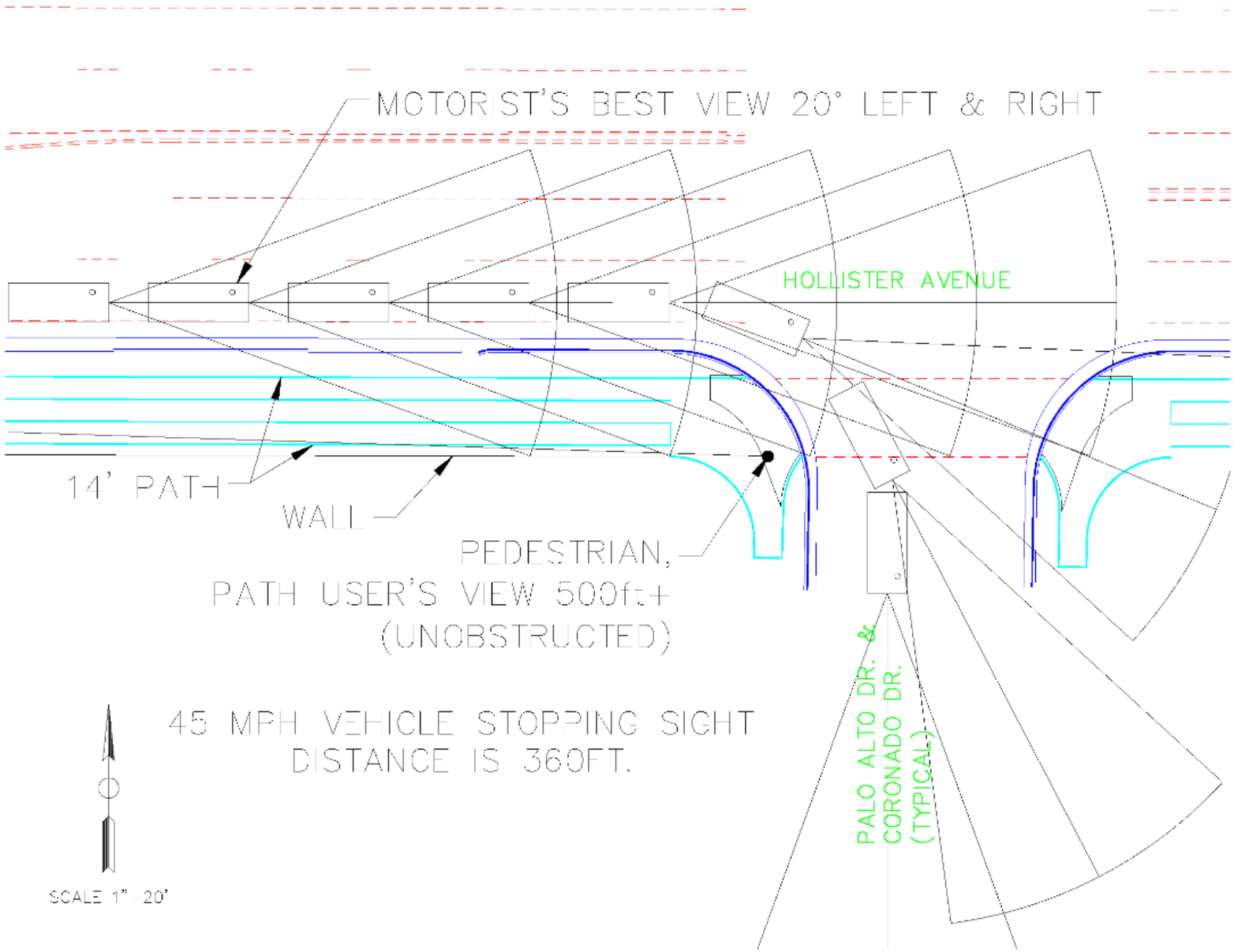
INTERSECTION CROSSING –BEND OUT DESIGN
Analyzed for Palo Alto and Coronado



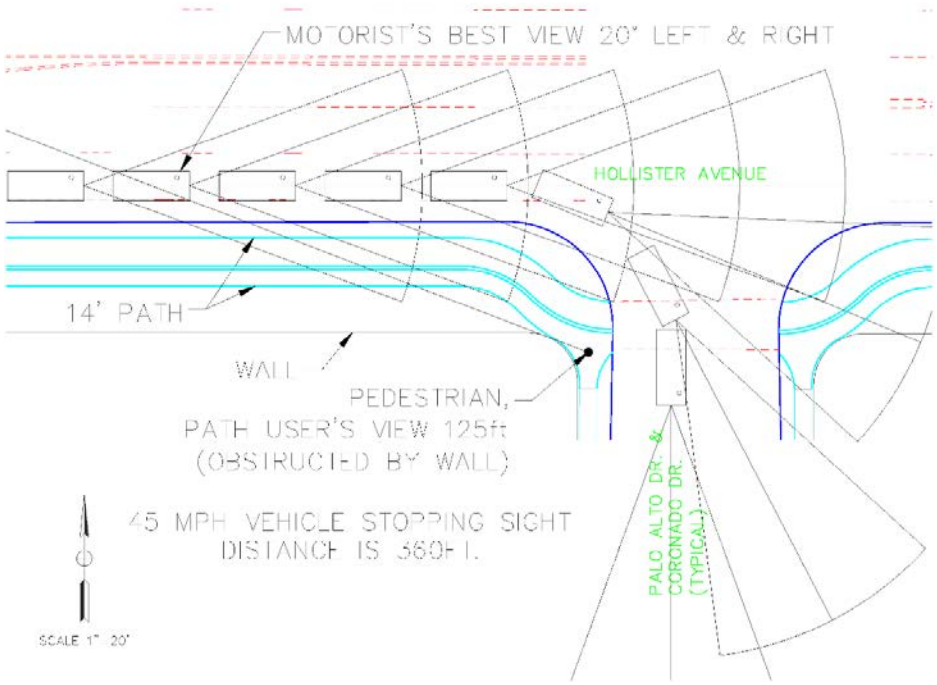
INTERSECTION CROSSINGS – Sight Distance
Bend Out Design Concept



INTERSECTION CROSSINGS – Sight Distance
Current Design Concept



INTERSECTION CROSSINGS – Visibility Comparison

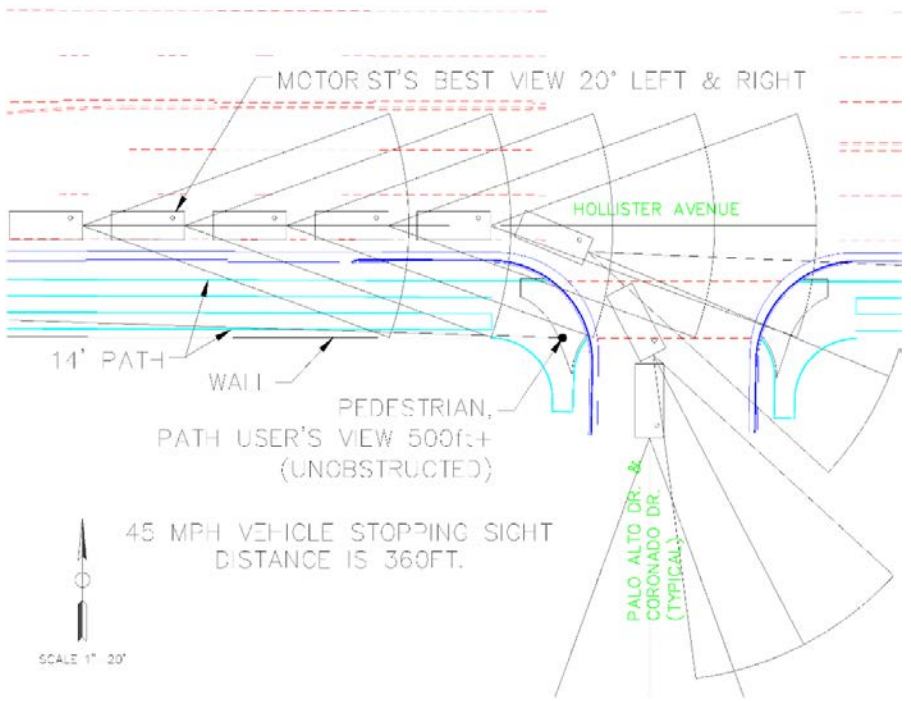


Bend Out Design

- Stopping Sight Distance for 45 mph speeds: 360 ft
- Available: 125 ft

Current Design

- Stopping Sight Distance for 45 mph speeds: 360 ft
- Available: Greater than 500 ft



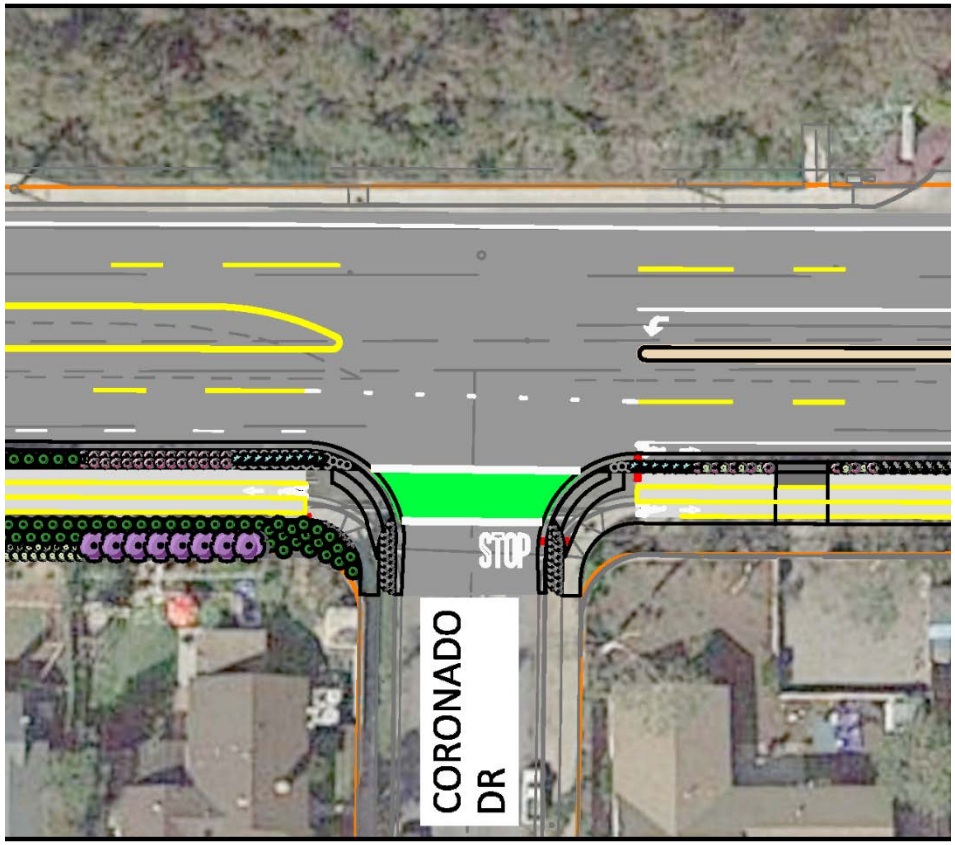
INTERSECTION CROSSING –Sight Distance

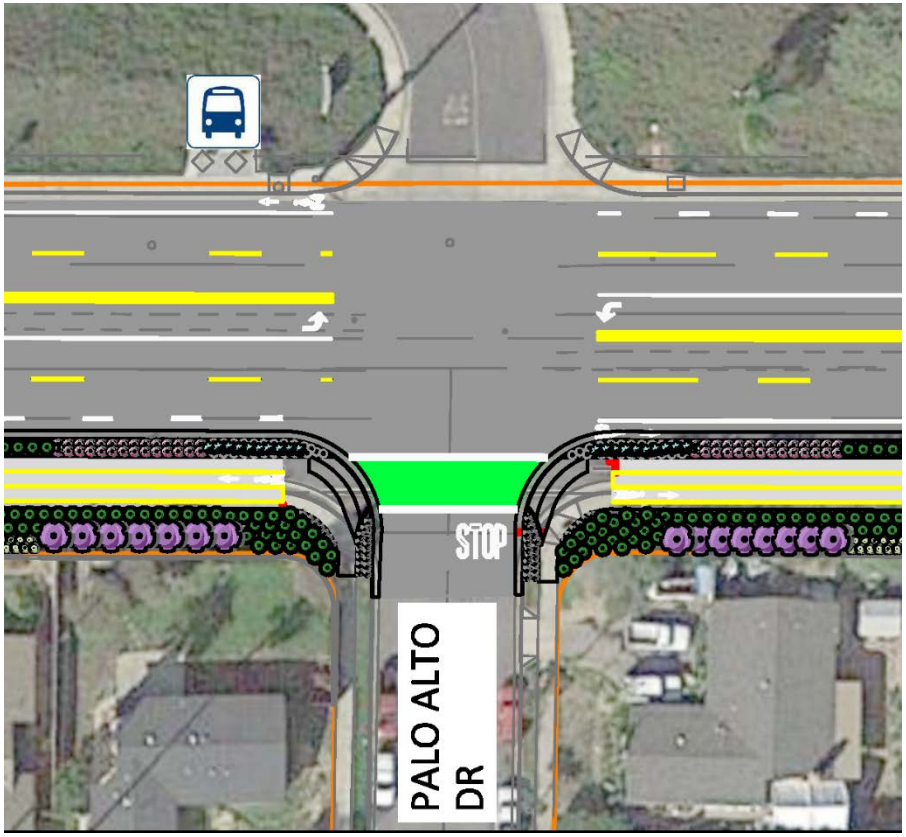
Street View- Approach to Palo Alto

Street View- Approach to Coronado

INTERSECTION CROSSINGS

Final Design Proposed For Palo Alto and Coronado





Speed Table

- Speed Table was proposed at locations of Bend Outs
- Speed Table goes hand and hand with Bend Out
- Setback clearance from traveled way proposed with Bend Out necessary to provide distance to ramp down from speed table
- Would not accommodate exist roadway drainage patterns

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Pavement Rehabilitation on Hollister Ave.

- Pavement Engineering Inc. (PEI) – conducted pavement condition analysis
- Conducted onsite truck/buses counts to determine actual TI
- 4 inch digouts of localized base failures through out
- Pacific Oaks Road to Entrance Road and Pebble Beach to Via Jero – mill off 3 inches of exist AC and place 3 inches of new AC
- Entrance Road to Pebble Beach – Type II Slurry Seal

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Traffic Handling During Construction

- Clear Path will be maintained for pedestrians and bicyclists for access to Ellwood school
- Use of K-railing (similar to traffic control used in front of Westar project) – to separate pedestrians and bicyclists from the work areas
- One lane in each direction will remain open on Hollister Avenue with access to cross streets and driveways
- Construction will be completed in 4-5 months

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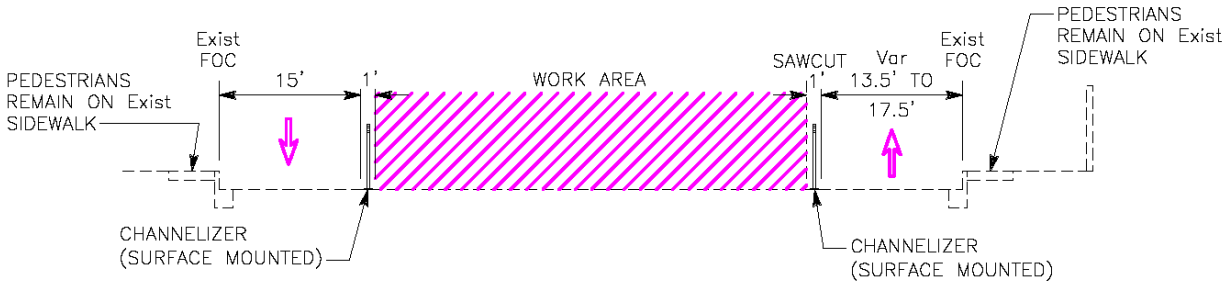
Proposed Traffic Handling During Construction

STAGE 1



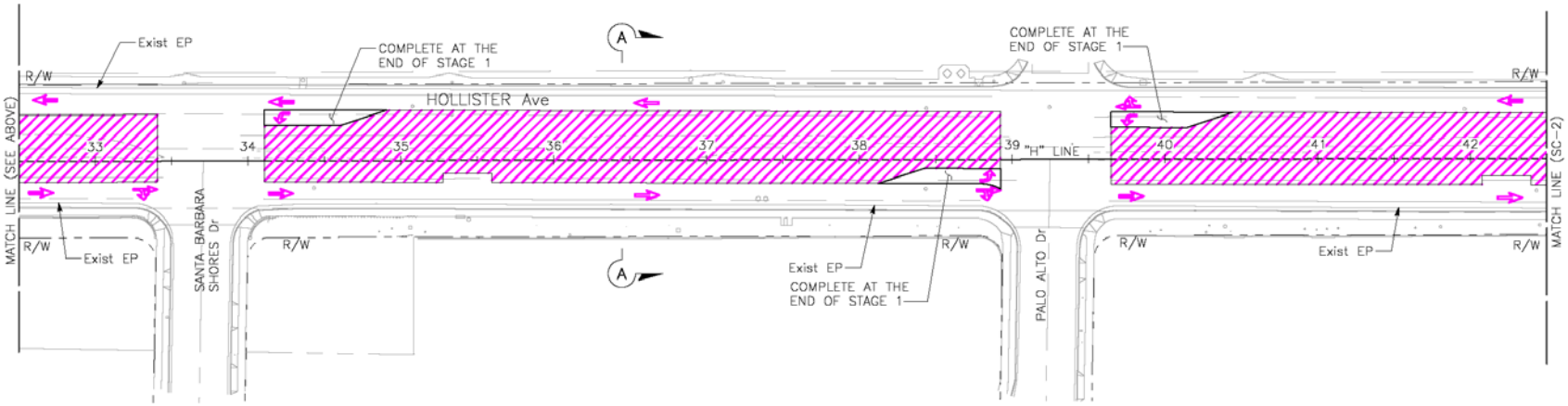
SECTION A-A

NO SCALE

LEGEND:

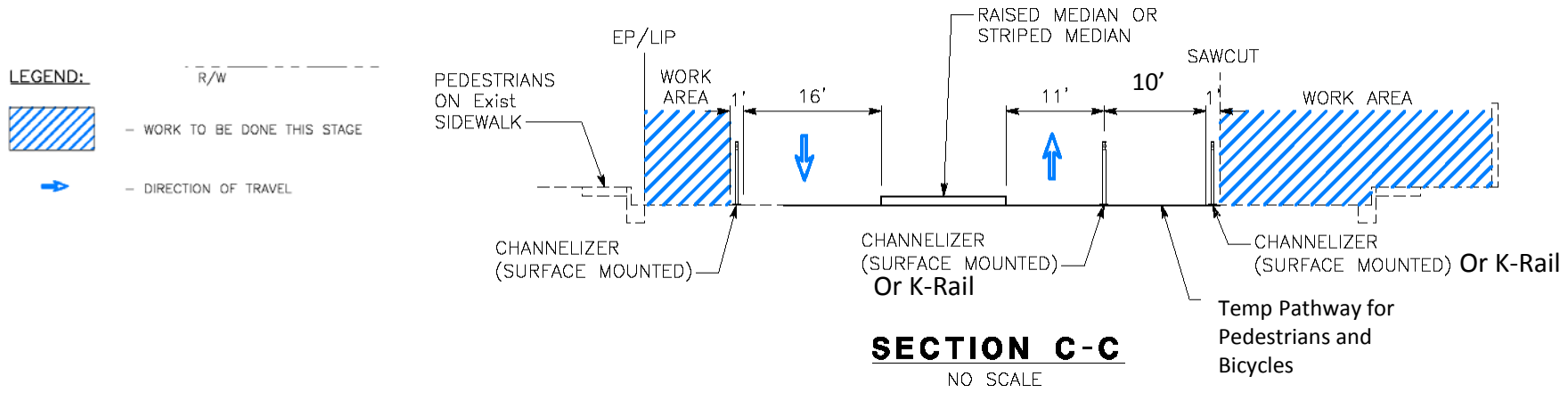
– WORK TO BE DONE THIS STAGE

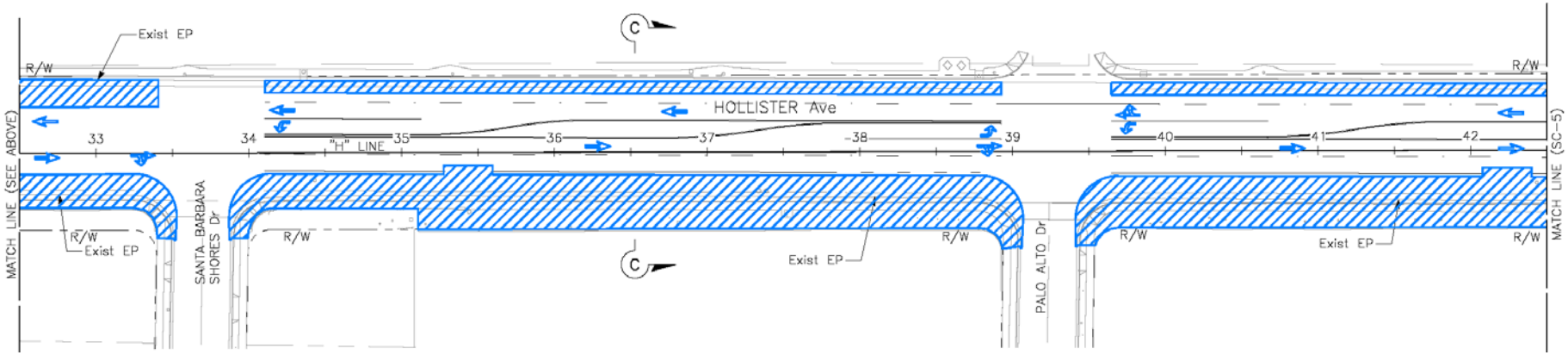
– DIRECTION OF TRAVEL



Proposed Traffic Handling During Construction

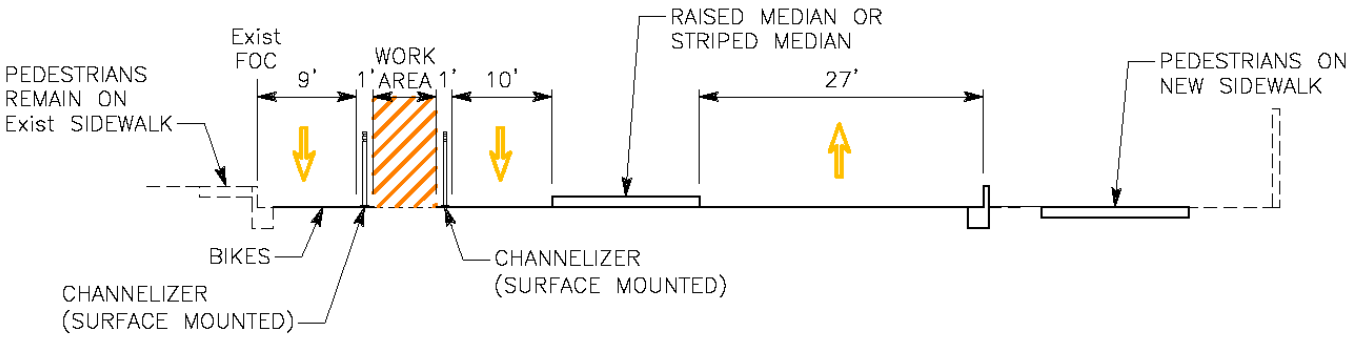
STAGE 2





Proposed Traffic Handling During Construction

STAGE 3



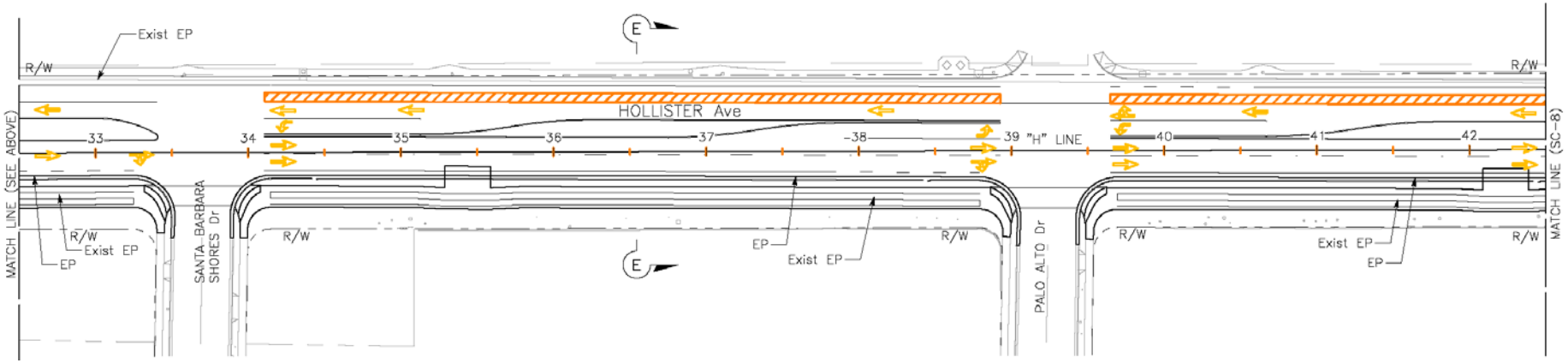
SECTION E-E

NO SCALE

LEGEND:

– WORK TO BE DONE THIS STAGE

– DIRECTION OF TRAVEL



Construction Costs

- Current Construction Cost Estimate – **$2.8 million**
- ATP Grant Funding – $1.644 million
- Local Funds – $1.2 million

- Pavement Rehabilitation (funded from the City's Annual Pavement Rehabilitation Program) – **$1.4 million**

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Construction Costs

Additional Costs :

- Installation of Path Lighting – $500,000
  - Alternate - Install underground conduit and Pull Boxes Only to Accommodate Future Installation of Lighting Fixtures and Bases - $230,000
- Construction of Raised Landscaped Medians – $215,000
  - Construct 3 new Raised Median Islands between Pebble Beach and Coronado
  - Add Landscaping and Irrigation to new and existing Raised Median Islands
    - Alternate: Add landscape and irrigation to existing medians only - $32,000
- Colored/Stamped Concrete for 4 ft wide pedestrian path (approximate cost $14/sqft) - $190,000

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QUESTIONS

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