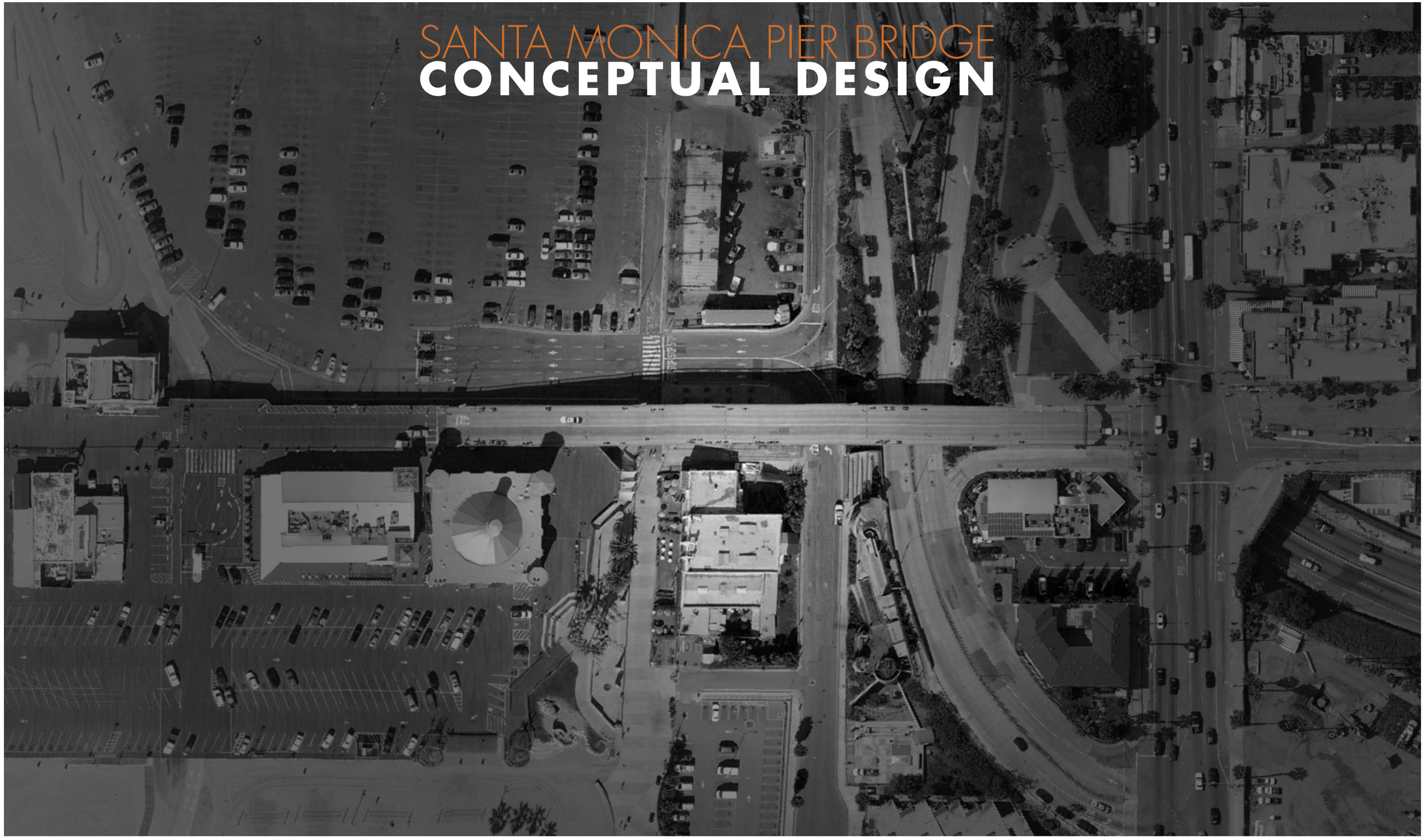
SANTA MONICA PIER BRIDGE
CONCEPTUAL DESIGN



SANTA MONICA PIER BRIDGE
CONCEPTUAL DESIGN

- **DESIGN SELECTION**
  - EXAMPLE WEIGHTING CRITERIA
  - TEMPLATE
  - EXAMPLE
  - MATRIX
- **ALTERNATIVES 1-4**
- **EXISTING SITE CONDITIONS**
- **ALT 1&2 SITE OPPORTUNITIES**
- **ALTERNATIVE 1**
  - AERIALS - SHORT AND LONG
  - CONCEPTS A&B PLAN & SECTION
  - CONCEPTS A&B 3D VIEWS
- **ALTERNATIVE 2**
  - CONCEPTS A-E PLAN & SECTION
  - CONCEPTS A-E 3D VIEWS
- **ALT 3&4 SITE OPPORTUNITIES**
- **ALTERNATIVE 3**
  - AERIAL
  - CONCEPTS A-D PLAN & SECTION
  - CONCEPTS A-D 3D VIEWS
- **ALTTERNATIVE 4**
  - AERIAL
  - 3D VIEWS 1-4
- **PRECEDENTS**
  - WOODEN CURVES
  - STAIRS WITH RAMPS
  - BRIDGES
  - SUSTAINABLE TECHNOLOGY
- **ALT 2 DESIGN ENHANCEMENTS**
  - DESIGN ENHANCEMENTS 1-5

	PRIMARY CRITERIA	ISSUES INCLUDED
A	CONSTRUCTABILITY	○ Minimize construction duration ○ Minimize traffic impacts ○ Maximize sustainability
B	ADA COMPLIANCE	○ Accessibility meeting RFP objectives (full compliance) ○ Pedestrian safety enhancements
C	FEDERAL FUNDING	○ Comply with federal program guidelines ○ Maximize federal funding participation for non-standard items
D	PIER BUSINESS IMPACTS	○ Maximize access to Pier businesses ○ Minimize impacts to Pier business

CRITERIA	A	B	C	D
A		A vs. B	A vs. C	A vs. D
B			B vs. C	B vs. D
C				C vs. D
D				

CRITERIA	TOTAL	CRITERIA WEIGHT (%)
A		
B		
C		
D		
	0	0

NOTES:

1. Criteria A-J are compared in the table above. Compare criteria in each row with the criteria in each column.
   Example: Cell location (1,1) compares criteria A with criteria B.
2. "TOTAL" column sums up the number of occurrences of each criteria.
3. "CRITERIA WEIGHT (%)" column determines the percent of occurrences of each criteria by taking the number of occurrences of each criteria and

CRITERIA	A	B	C	D
A		A	C	D
B			B	B
C				D
D				

CRITERIA	TOTAL	CRITERIA WEIGHT (%)
A	1	17
B	2	33
C	1	17
D	2	33
	6	100

RANKING CRITERIA MATRIX

		BRIDGE ALTERNATIVE																	
		No Project		1		2		3		4		5		6		7		8	
CRITERIA WEIGHT (%)	CRITERIA	Evaluation	Weighted Score	Evaluation	Weighted Score	Evaluation	Weighted Score	Evaluation	Weighted Score	Evaluation	Weighted Score	Evaluation	Weighted Score	Evaluation	Weighted Score	Evaluation	Weighted Score	Evaluation	Weighted Score
17	CONSTRUCTABILITY		0	6	100		0		0		0		0		0		0		0
33	ADA COMPLIANCE		0	5	167		0		0		0		0		0		0		0
17	FEDERAL FUNDING		0	4	67		0		0		0		0		0		0		0
33	MINIMIZE PIER BUSINESS IMPACTS		0	3	100		0		0		0		0		0		0		0
0			0	2	0		0		0		0		0		0		0		0
0			0	1	0		0		0		0		0		0		0		0
0			0	9	0		0		0		0		0		0		0		0
0			0	4	0		0		0		0		0		0		0		0
0			0	6	0		0		0		0		0		0		0		0
0			0	5	0		0		0		0		0		0		0		0
	TOTAL WEIGHTED SCORE	0		433		0		0		0		0		0		0		0	
	COMMUNITY ACCEPTANCE (PASS/FAIL)																		
	COST																		
	SCORE/COST	#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!	

Bridge Alternative		Description
1	A	Two bike/pedestrian lanes, car lane center
2		
3		
4		
5		
6		
7		
8		

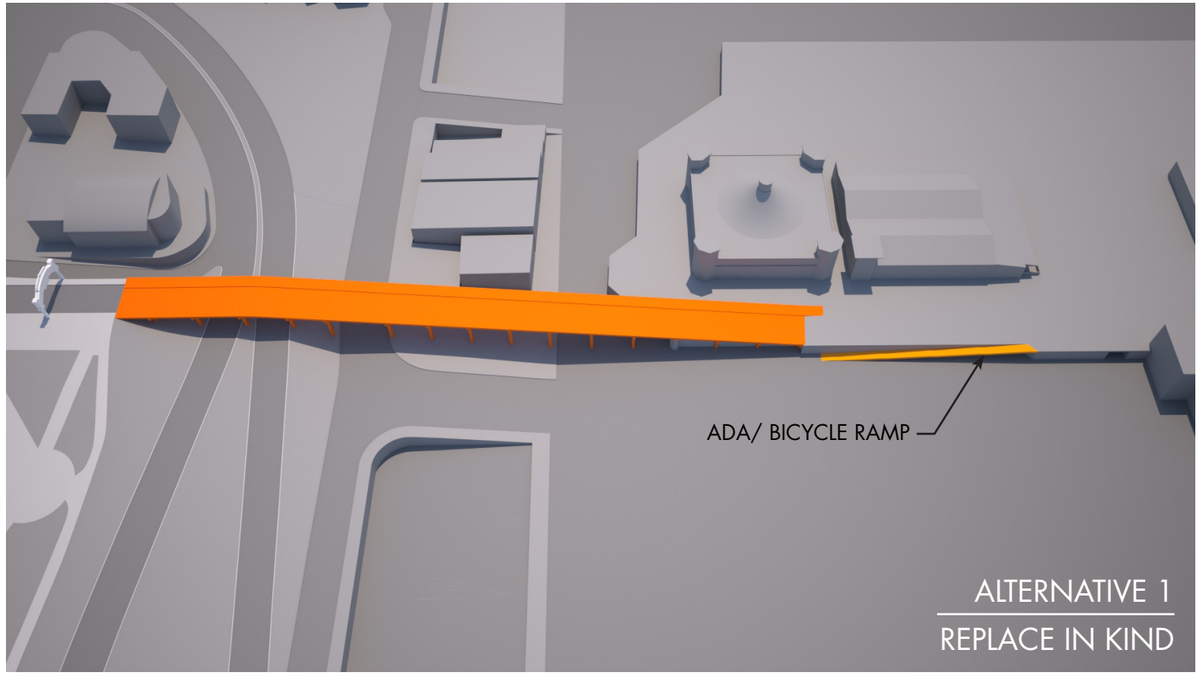
Evaluation:

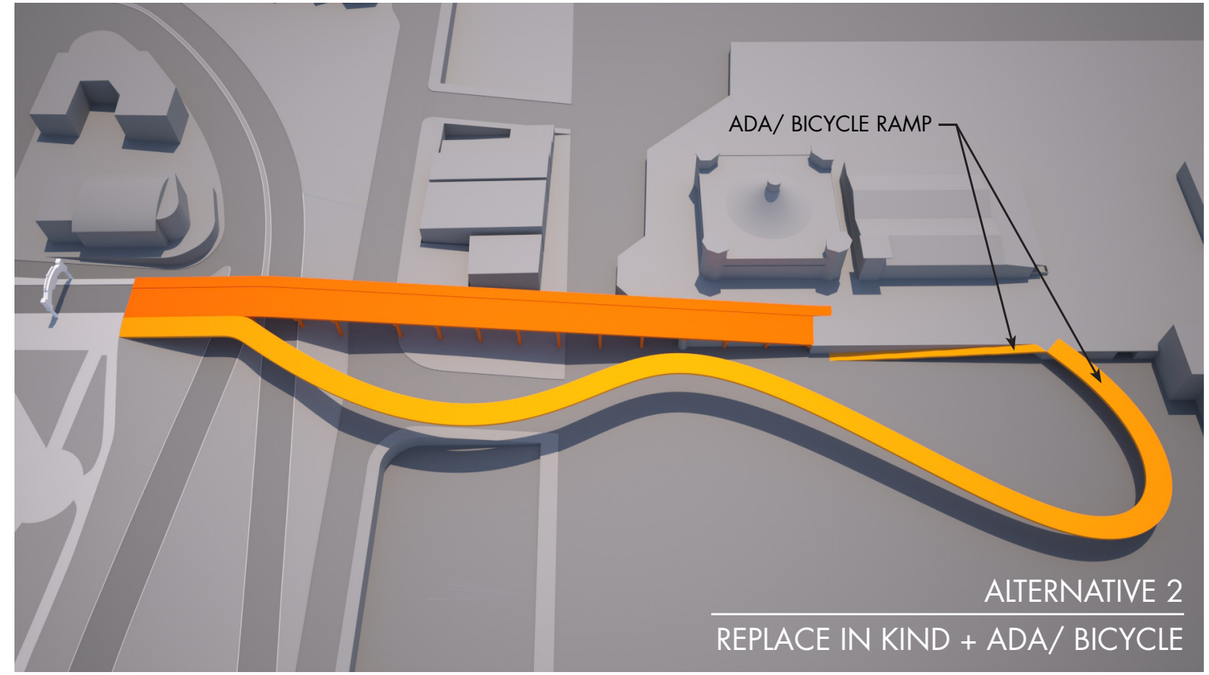
10	Best, satisfies the criteria very well
9	Closely satisfies the criteria
8	Good, satisfies the criteria comfortably
7	Adequately satisfies the criteria
6	Good, but there is more room to satisfy the criteria
5	Neither best nor least
4	Somewhat satisfies the criteria
3	Minimally satisfies the criteria
2	Attempts to satisfy the criteria
1	Least, does not satisfy the criteria or criteria doesn't apply

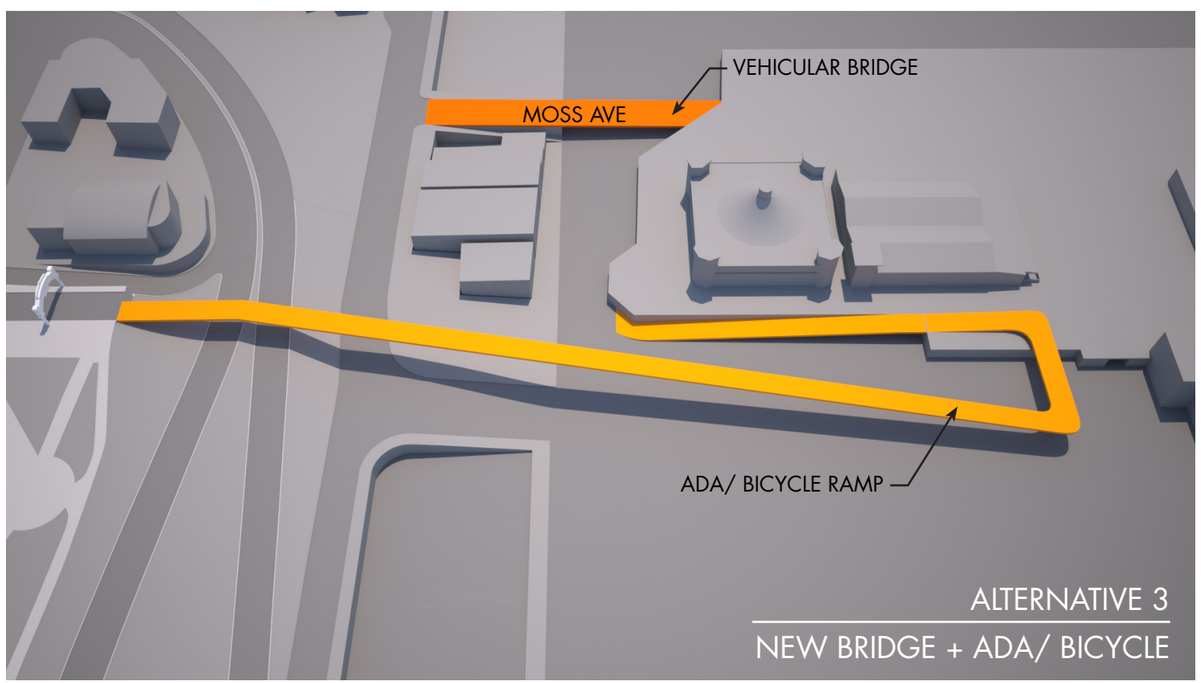
Notes:

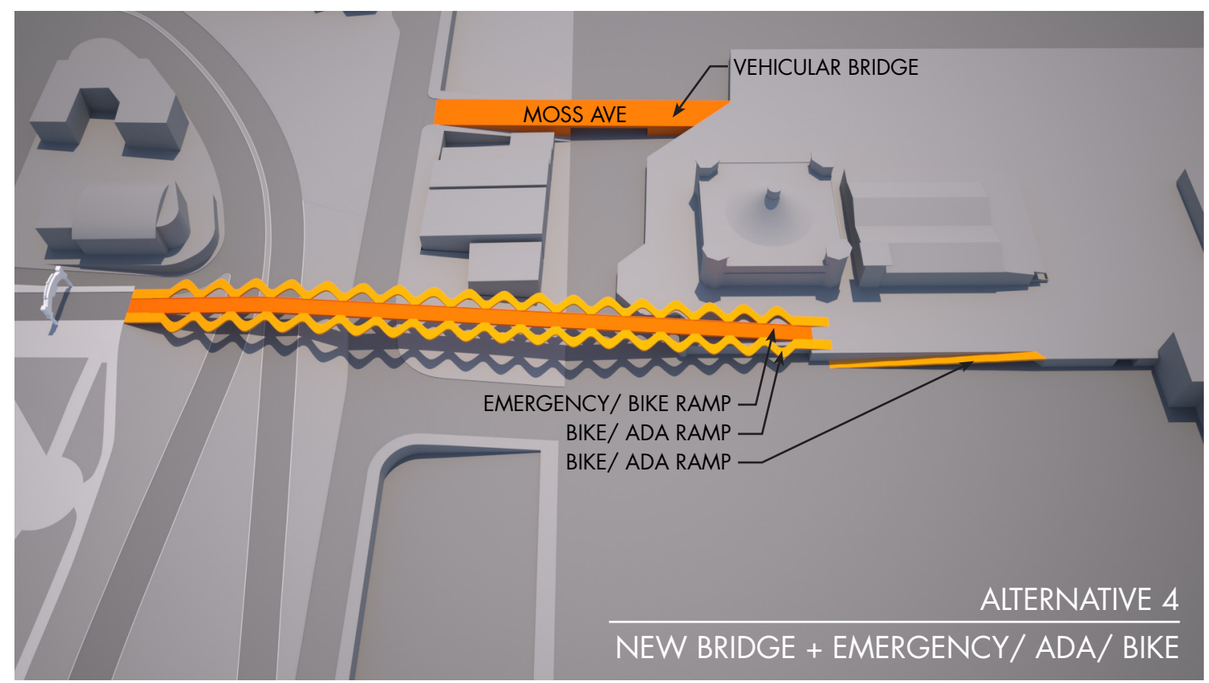
1. Alternatives are ranked from 1 (least) to 10 (best) in each criteria.
2. Criteria weight determined based on its importance relative to other criteria

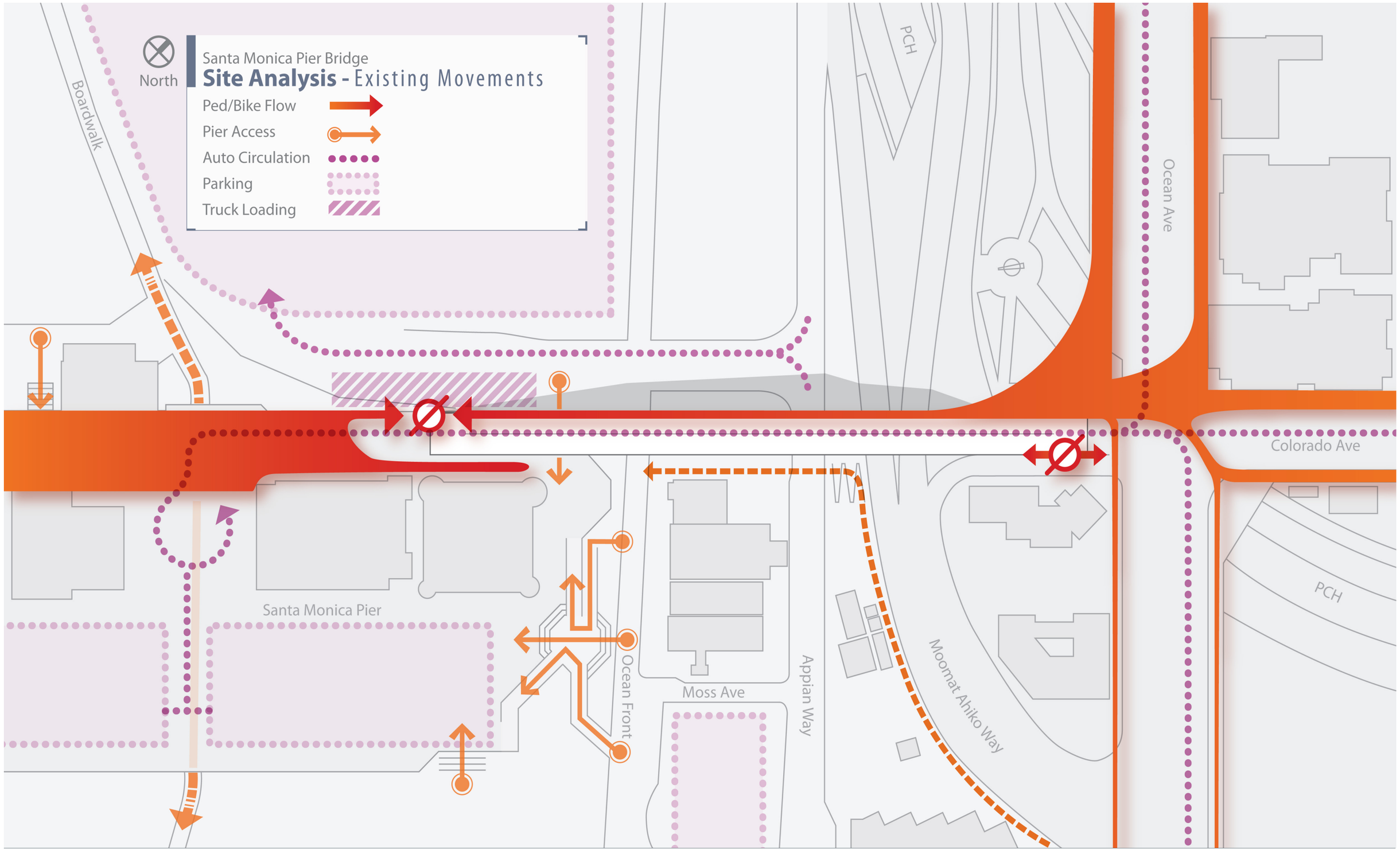
ALTERNATIVE SUMMARY







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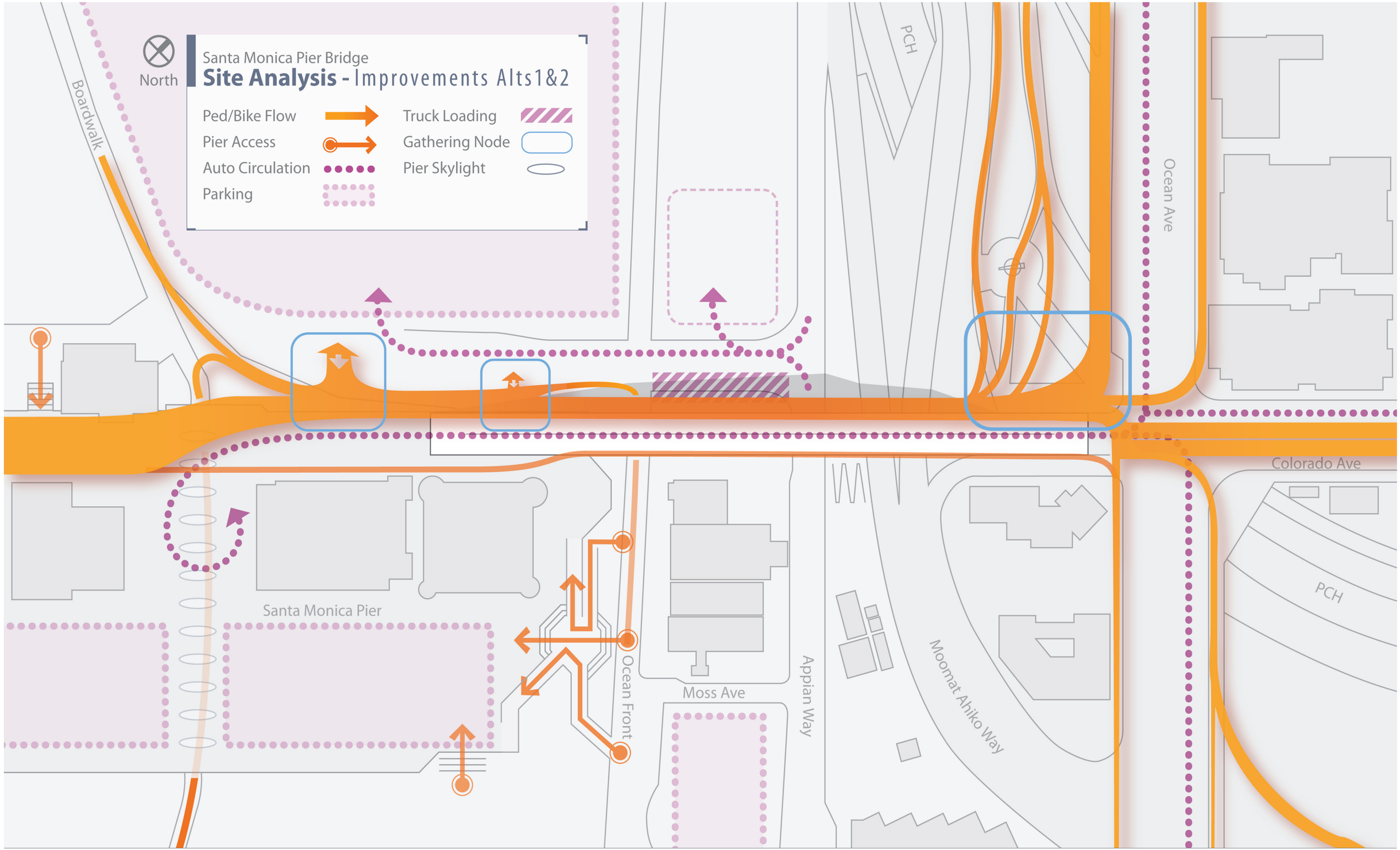
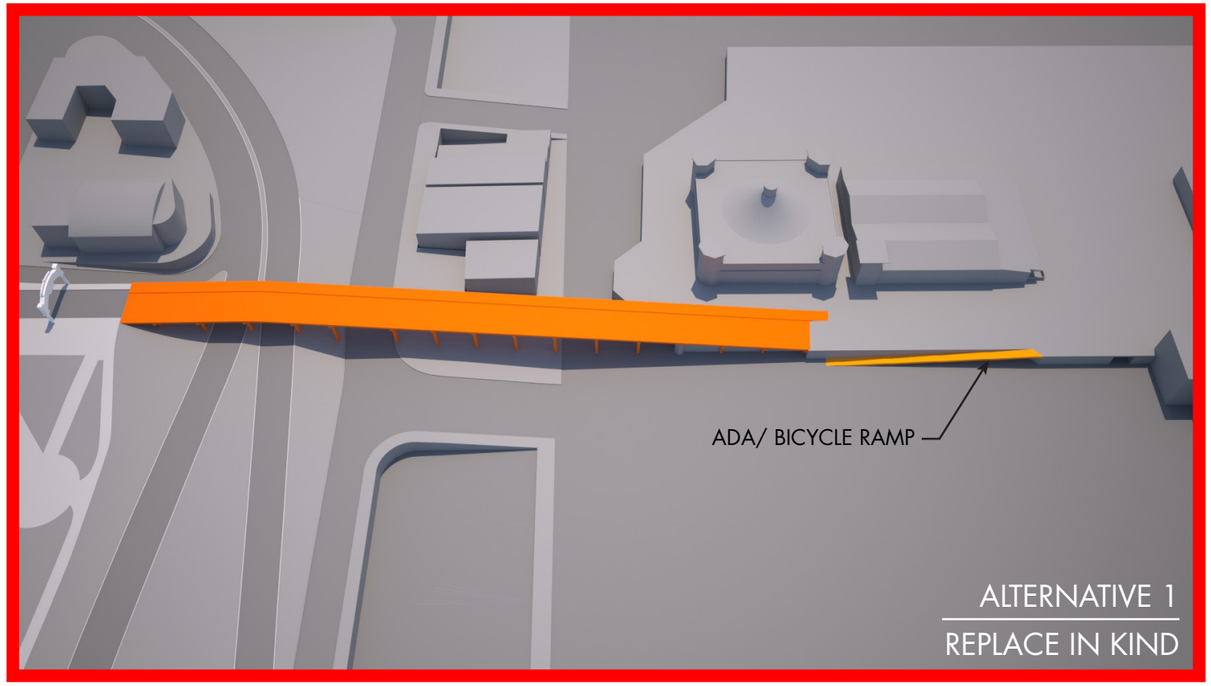
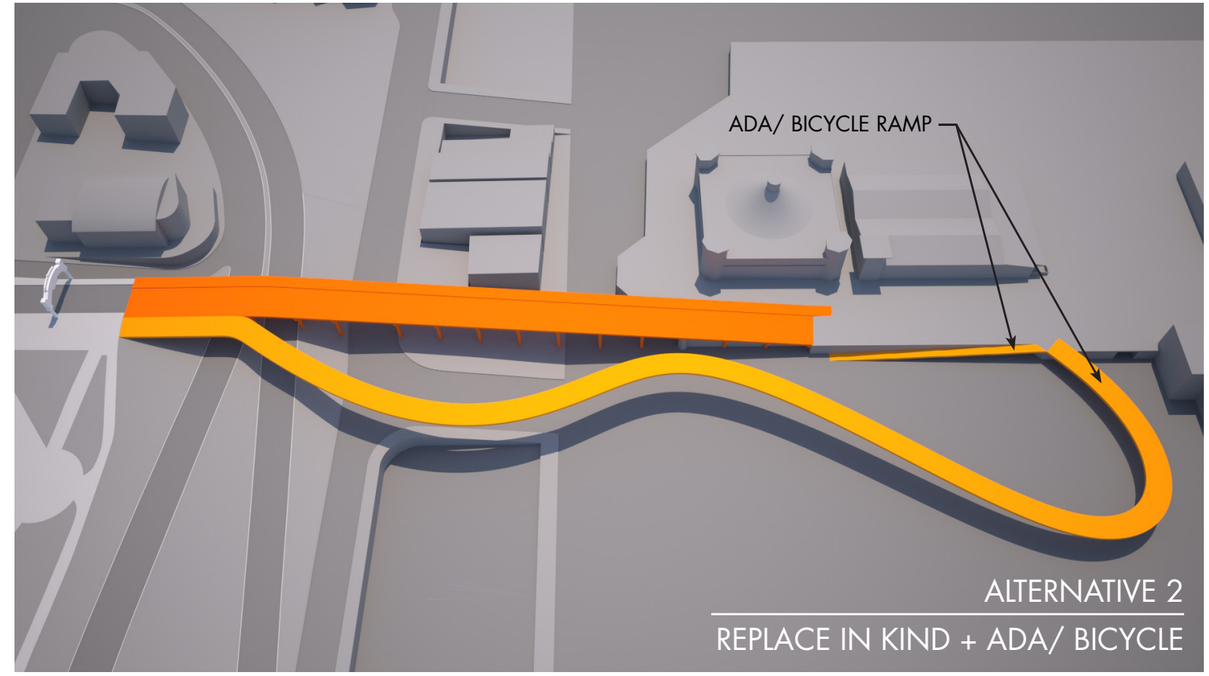
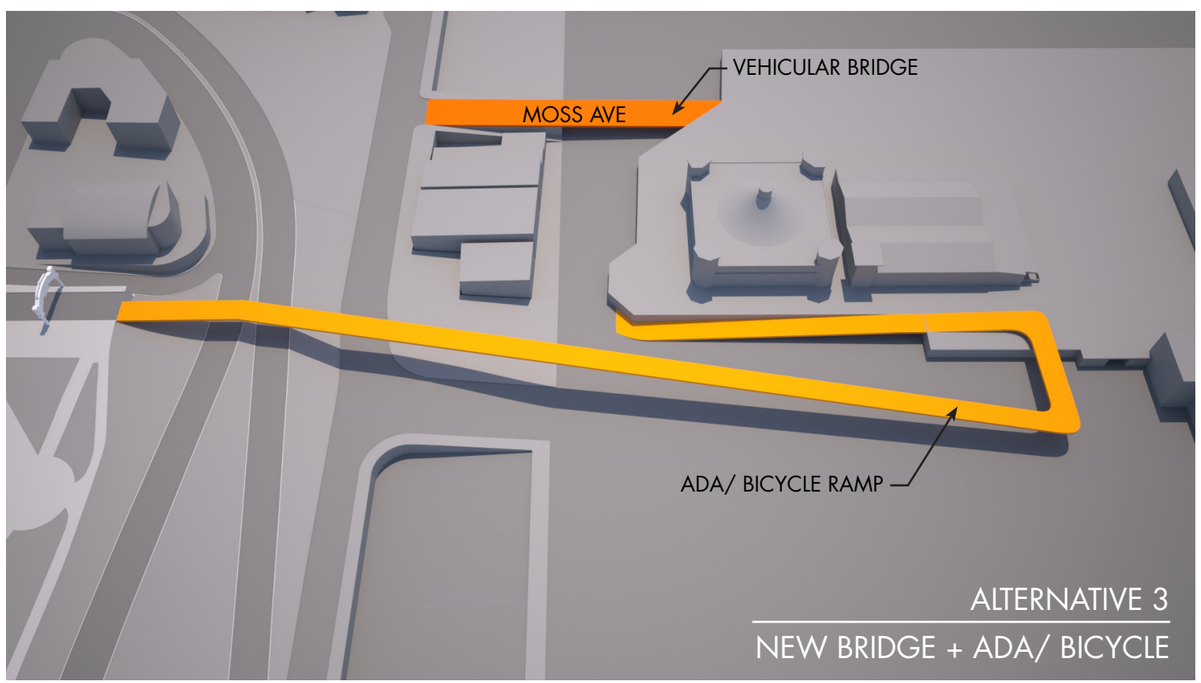
Santa Monica Pier Bridge
Site Analysis - Existing Movements
Ped/Bike Flow
Pier Access
Auto Circulation
Parking
Truck Loading
Boardwalk
PCH
Ocean Ave
Colorado Ave
PCH
Santa Monica Pier
Ocean Front
Moss Ave
Appian Way
Moomat Ahiko Way

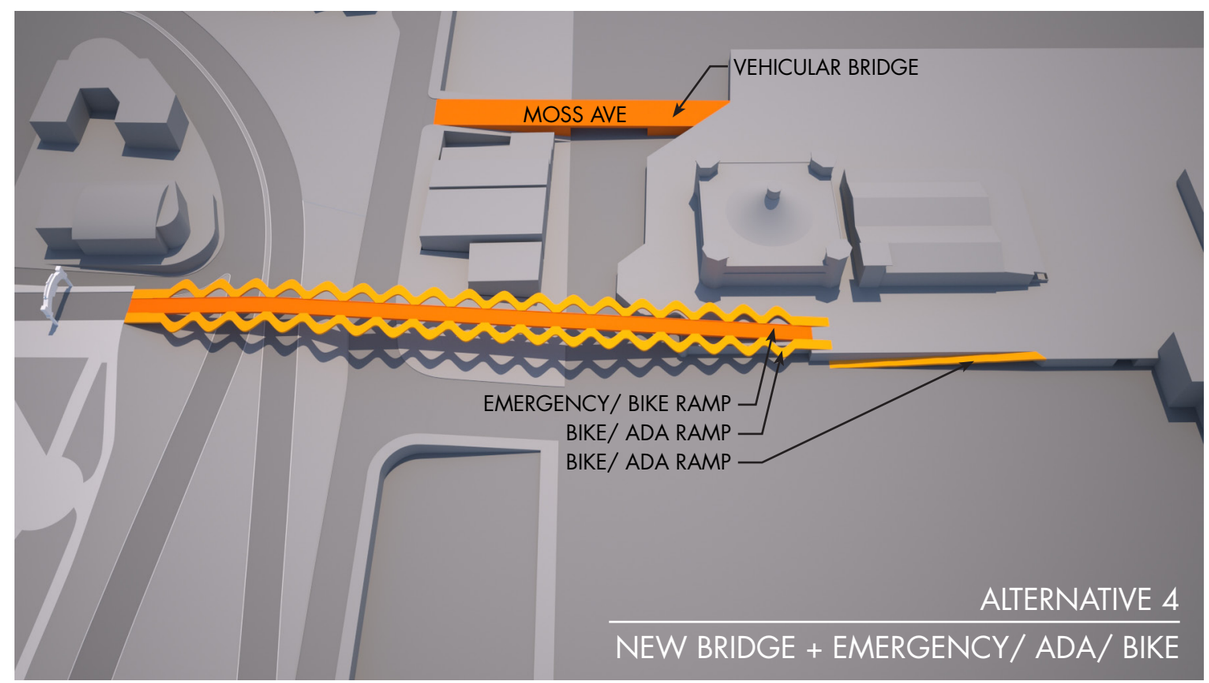

North
Santa Monica Pier Bridge
Site Analysis - Improvements Alts1&2
Ped/Bike Flow
Pier Access
Auto Circulation
Parking
Truck Loading
Gathering Node
Pier Skylight
Boardwalk
PCH
Ocean Ave
Colorado Ave
PCH
Santa Monica Pier
Ocean Front
Moss Ave
Appian Way
Moomat Ahiko Way

ALTERNATIVE SUMMARY

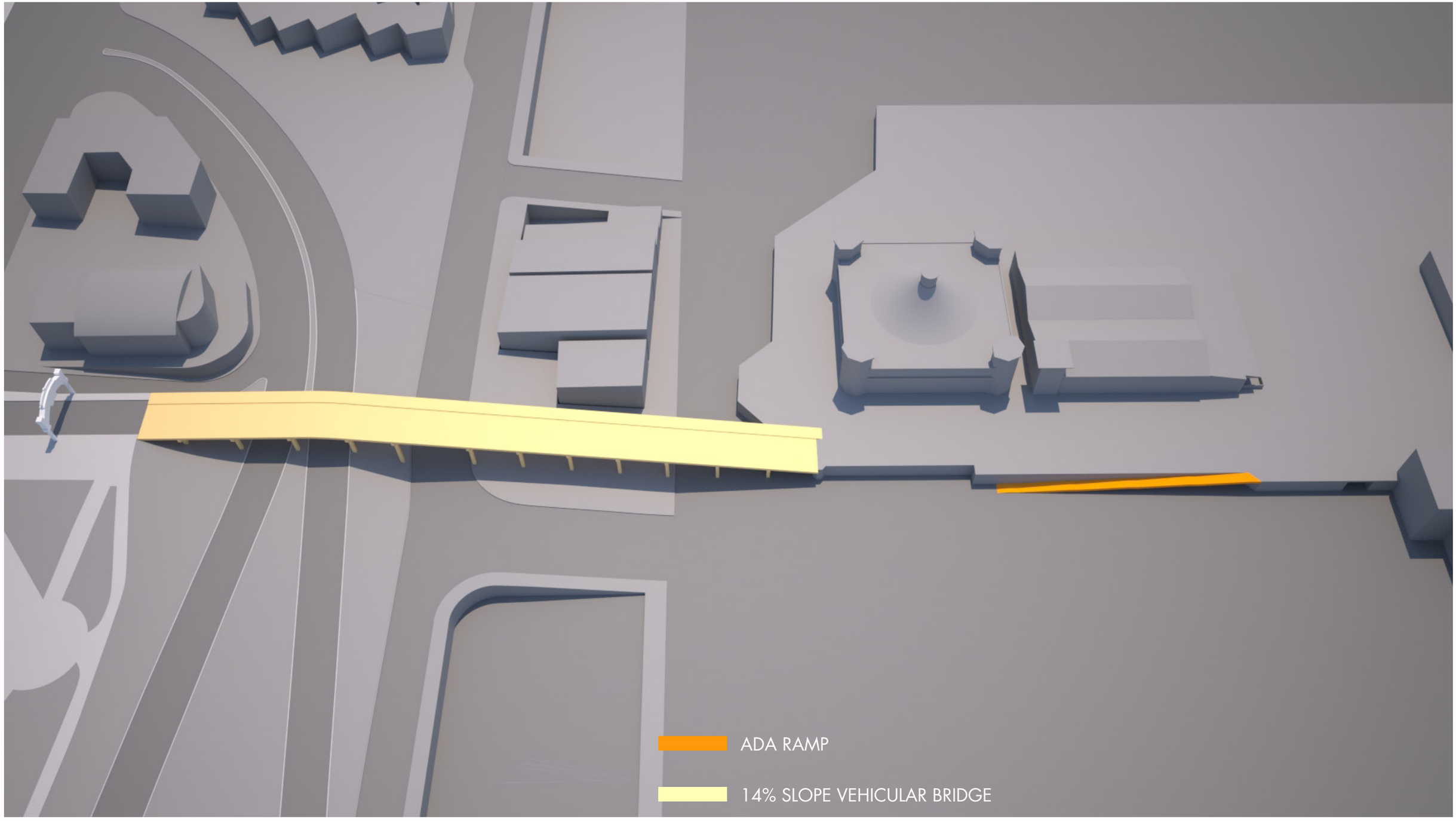




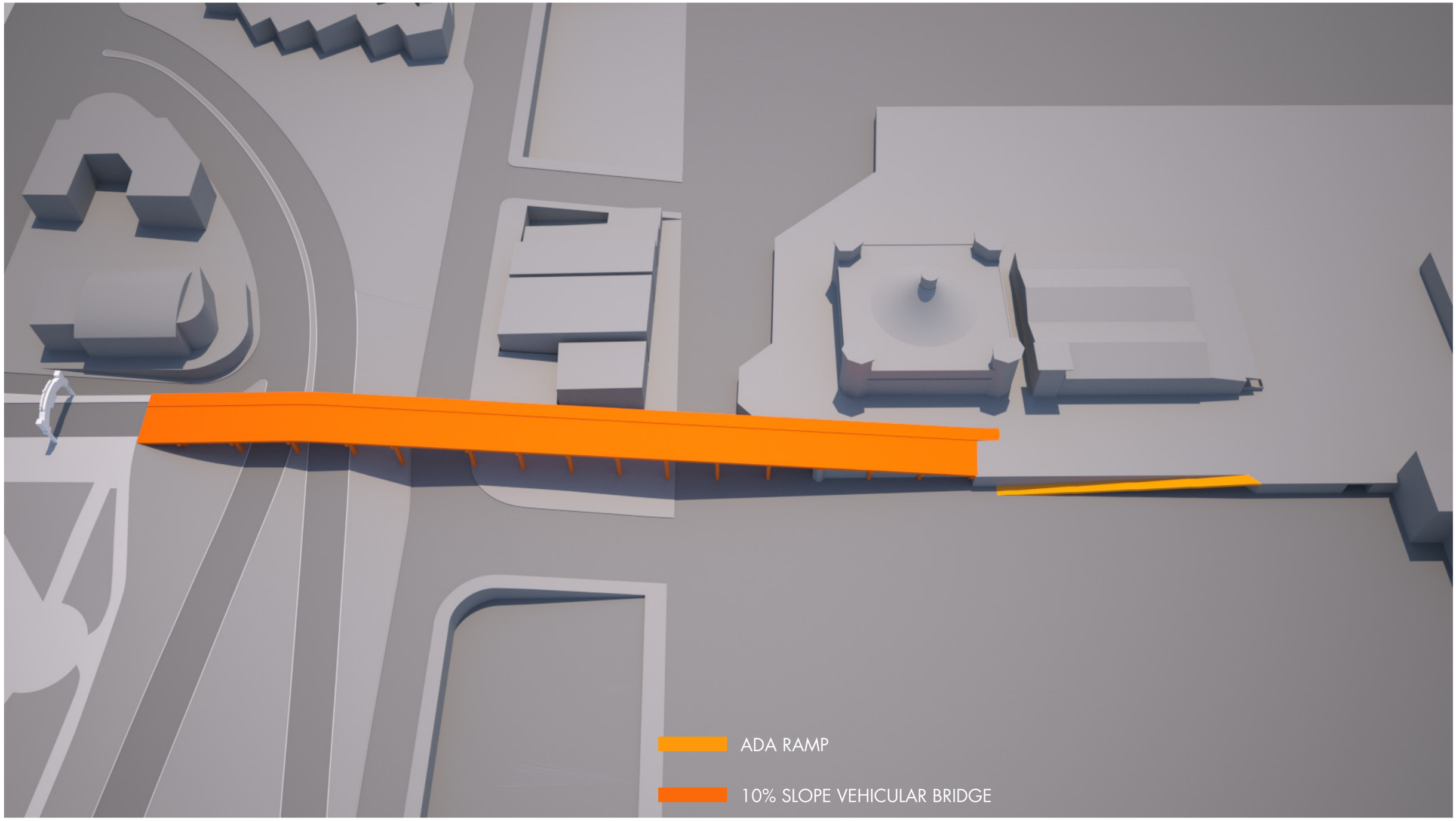




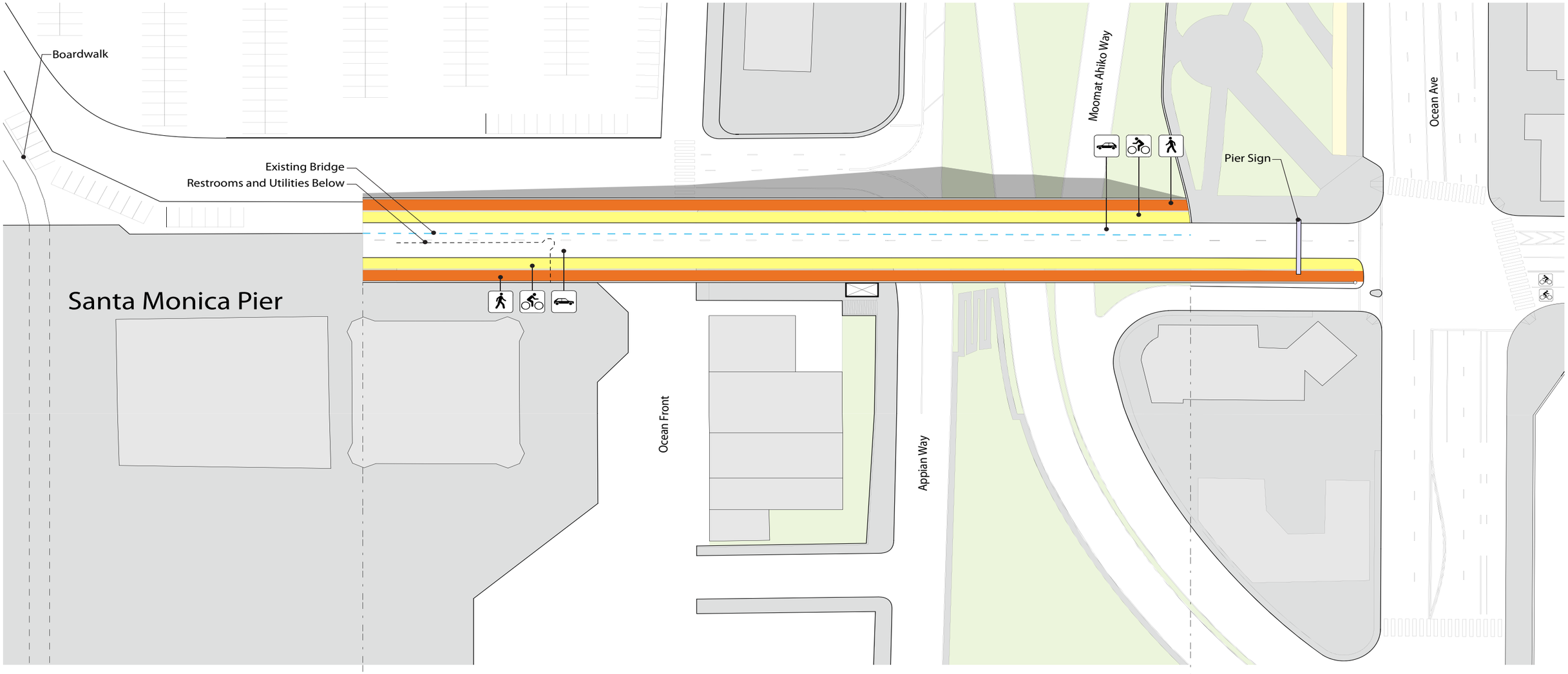
ALTERNATIVE 1 - SHORT

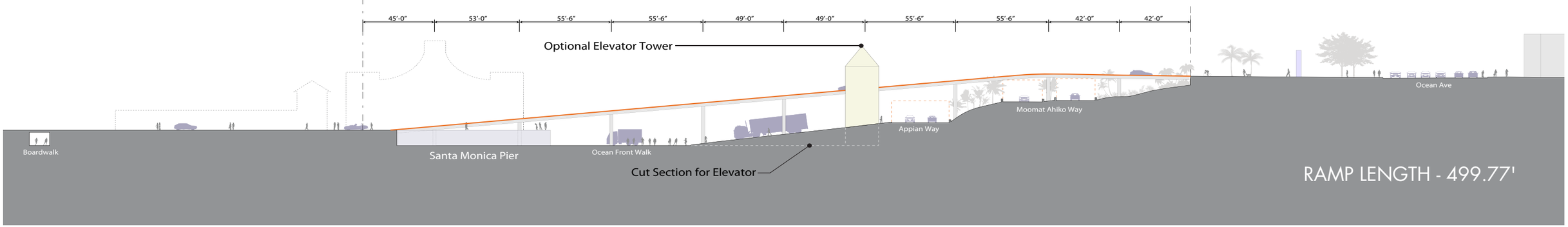


ALTERNATIVE 1 - LONG



ALTERNATIVE 1 CONCEPT A | PLAN & ELEVATION





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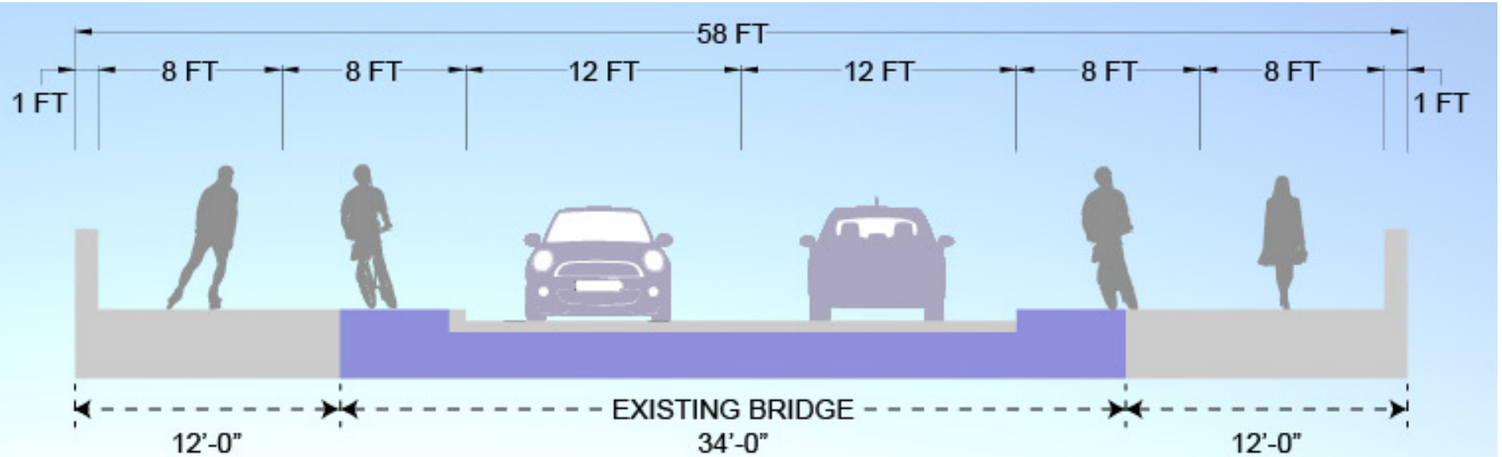
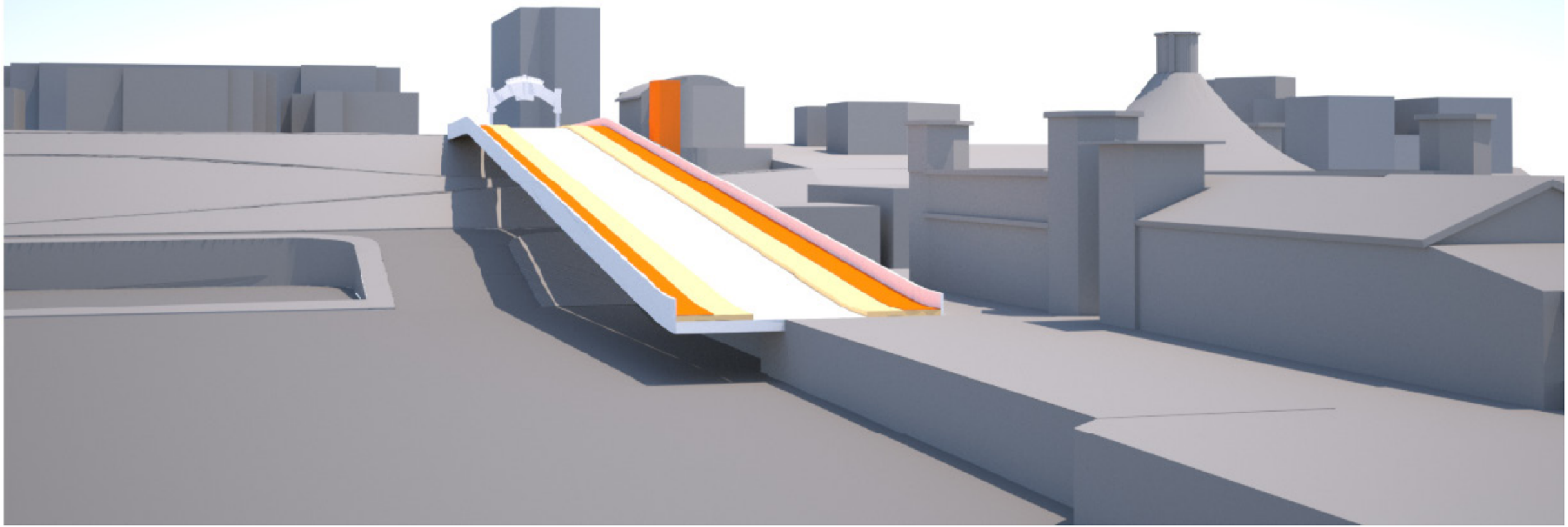
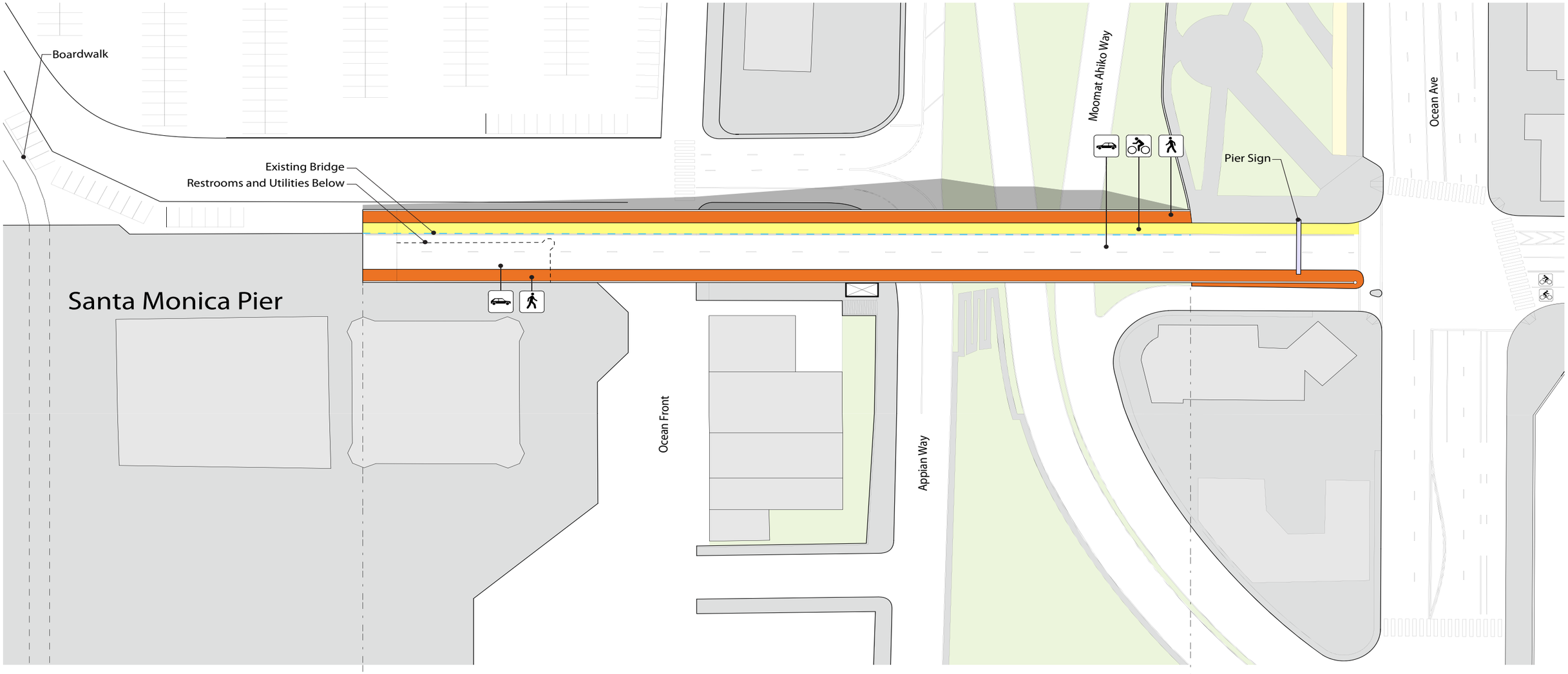
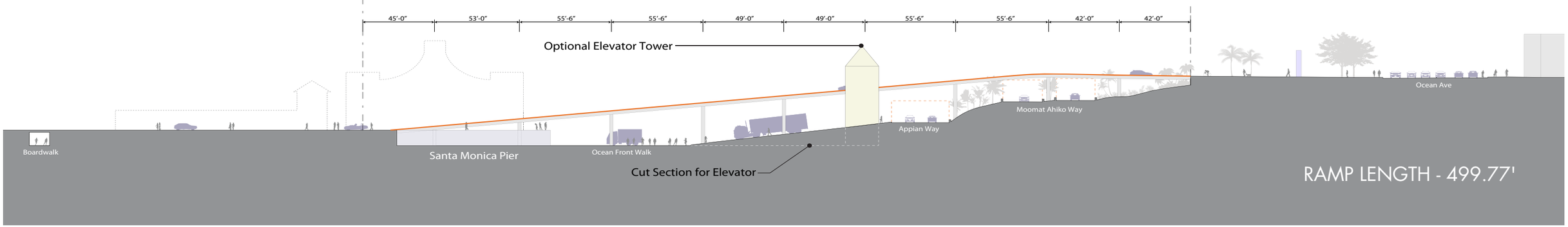


SECTION



ALTERNATIVE 1 CONCEPT B | PLAN & ELEVATION





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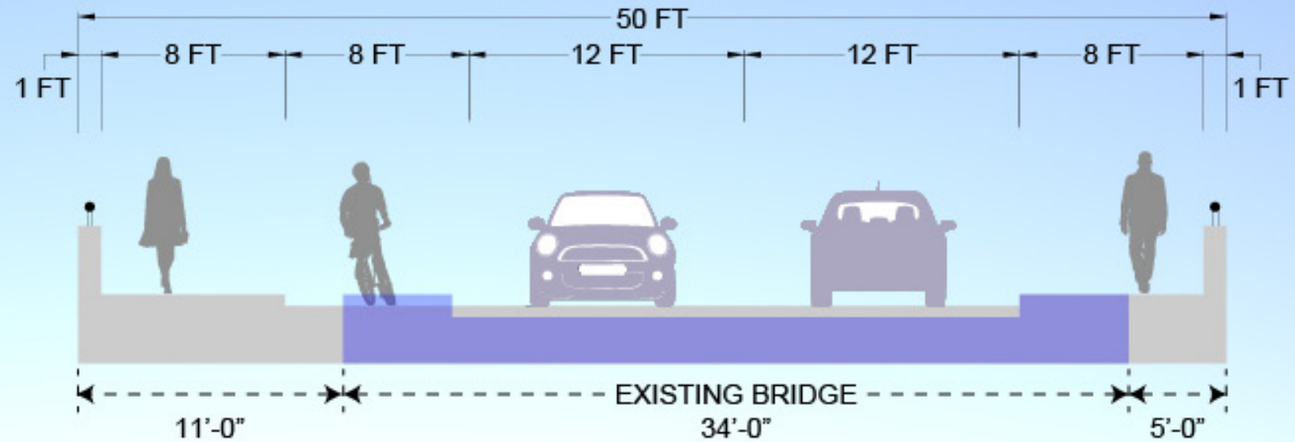

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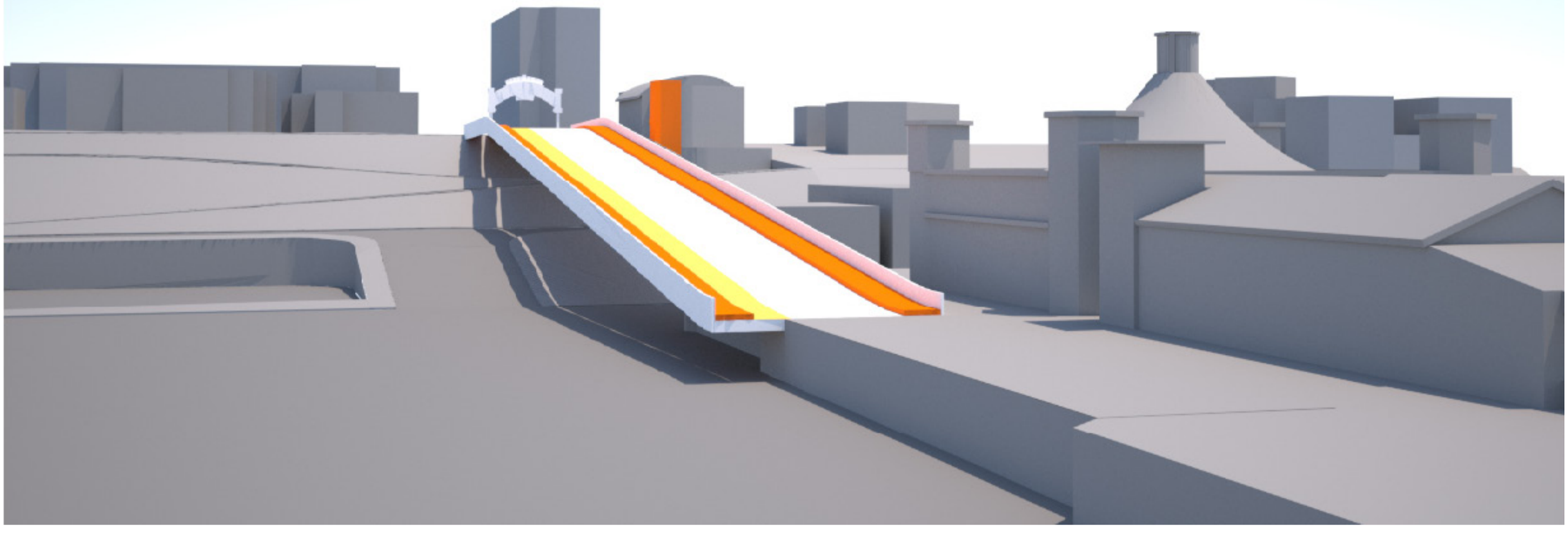
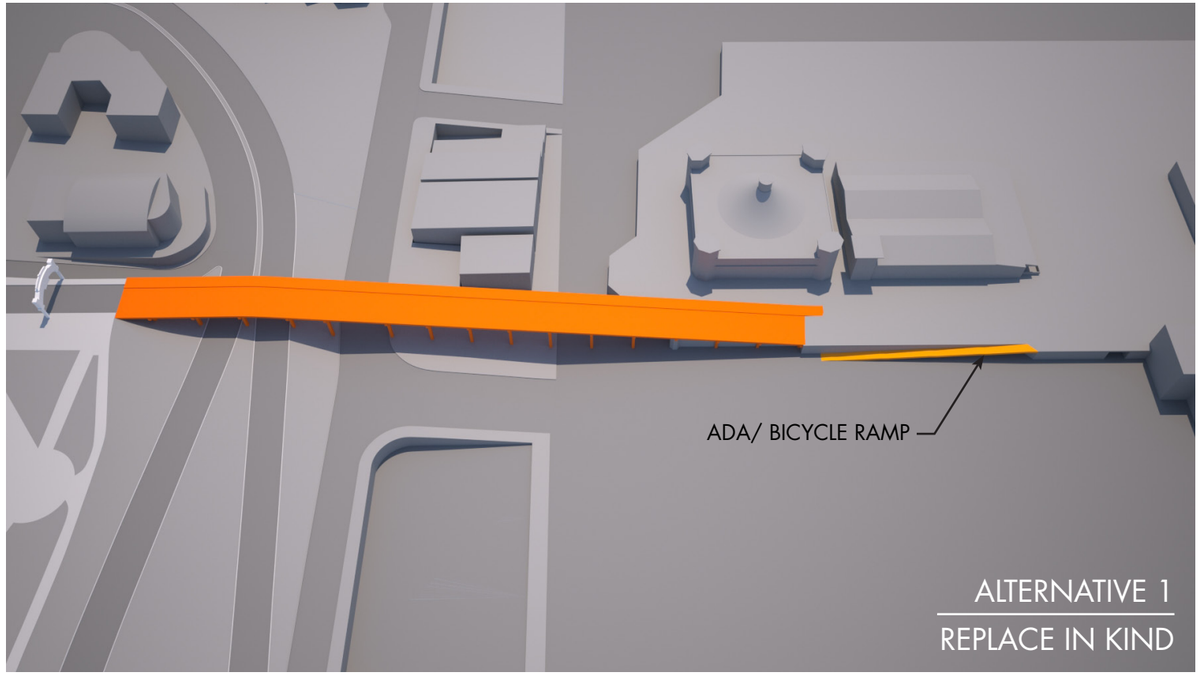
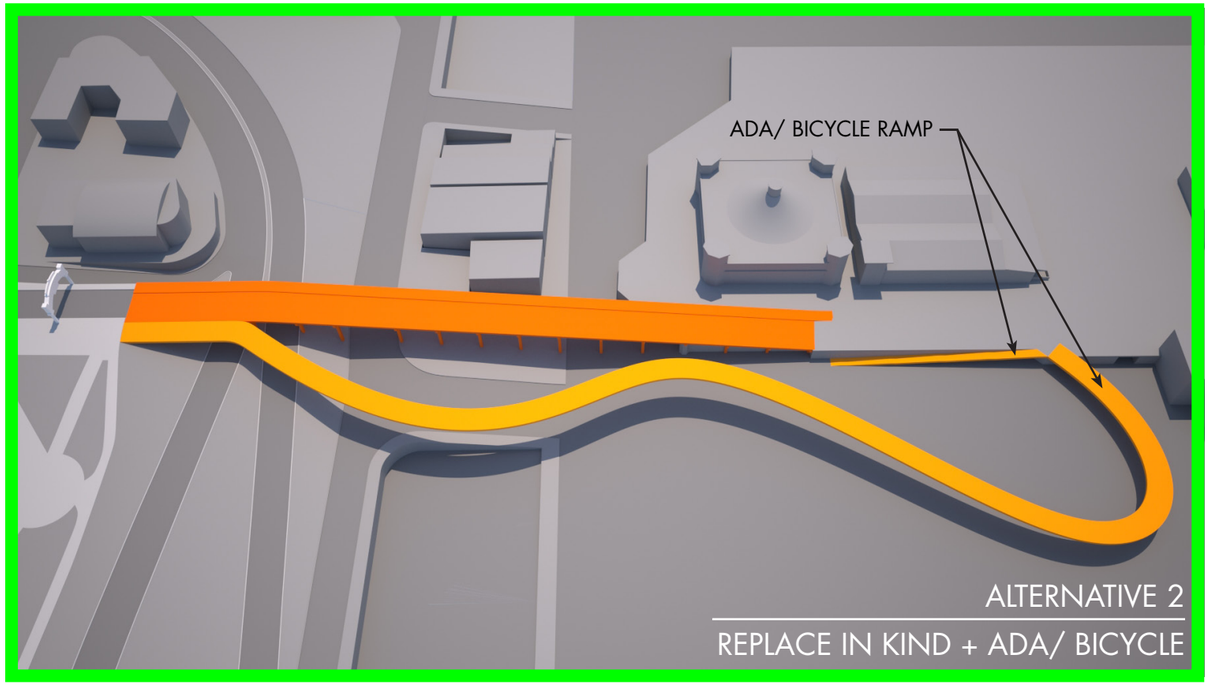
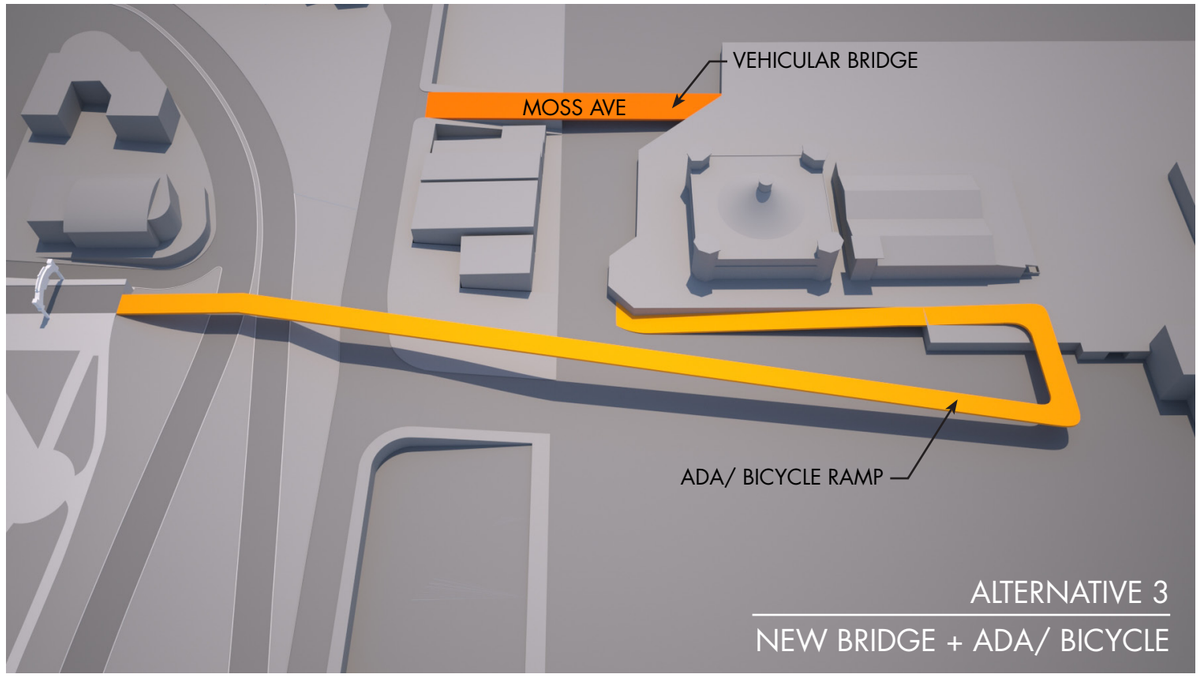
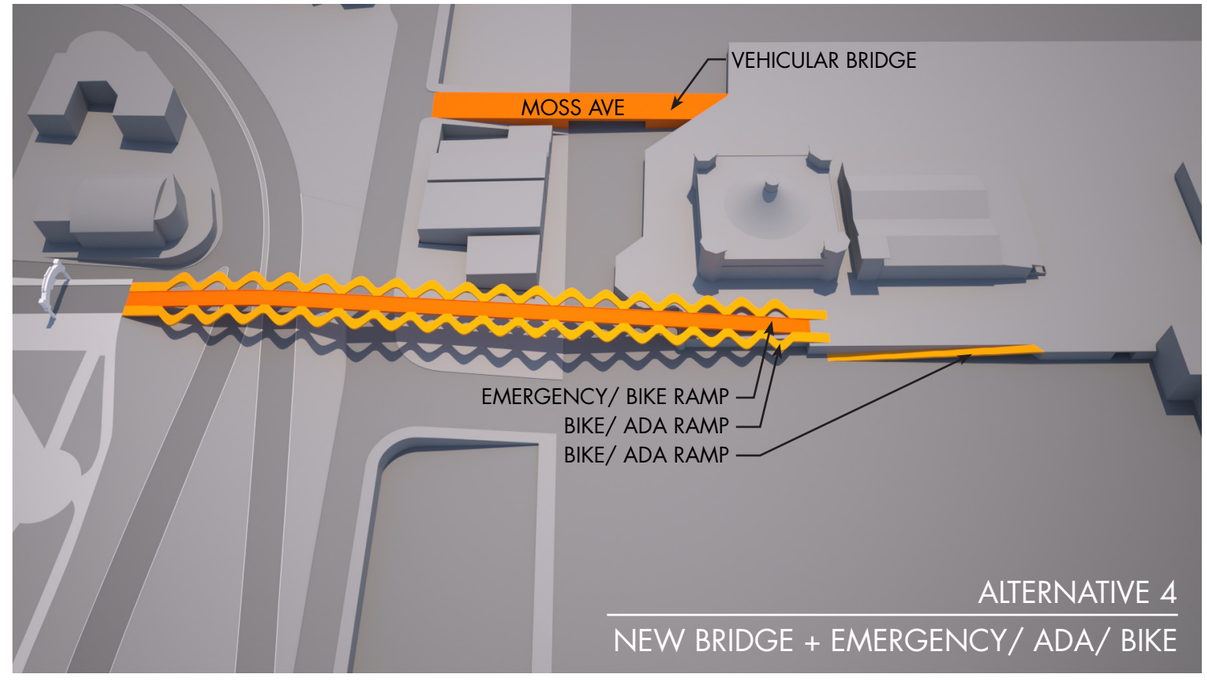


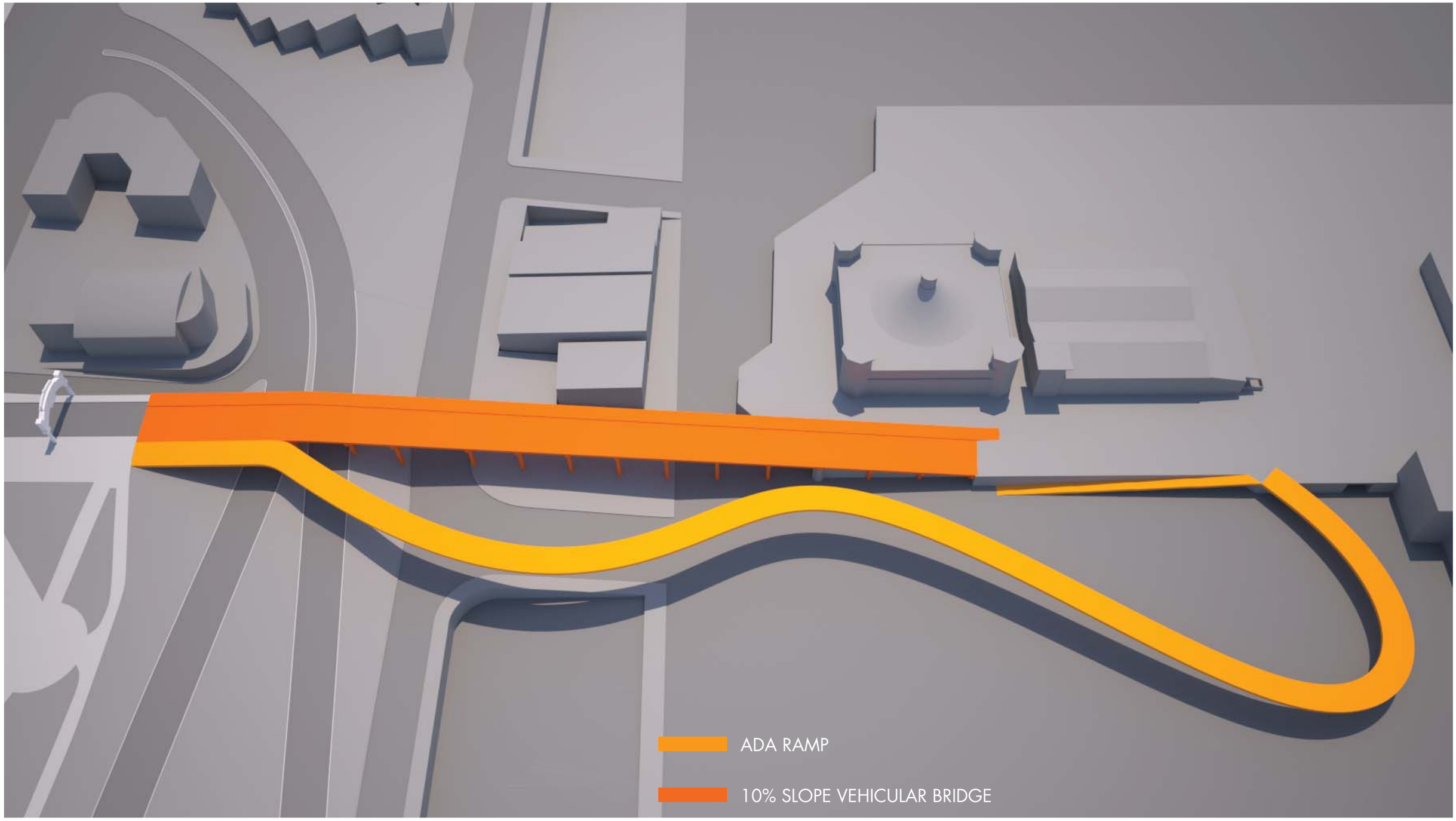
ALTERNATIVE SUMMARY



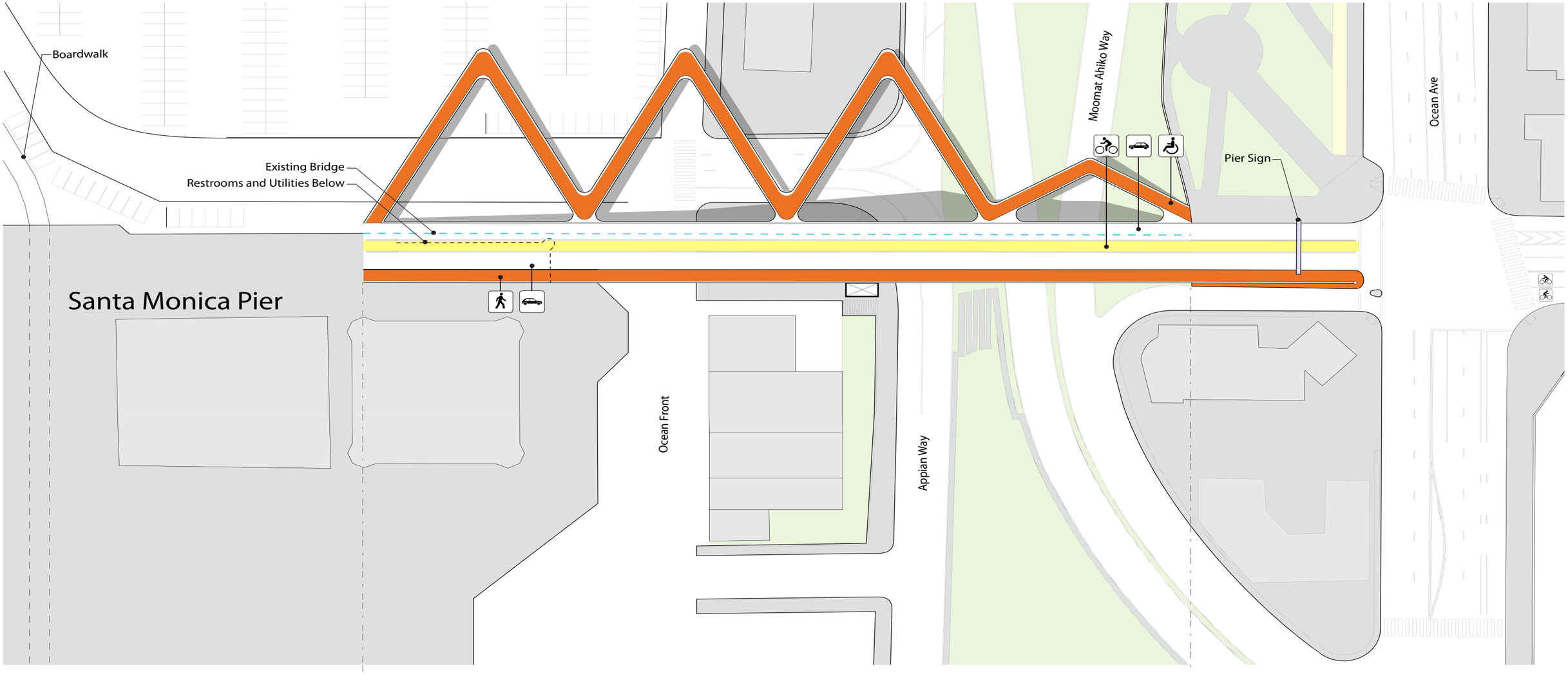


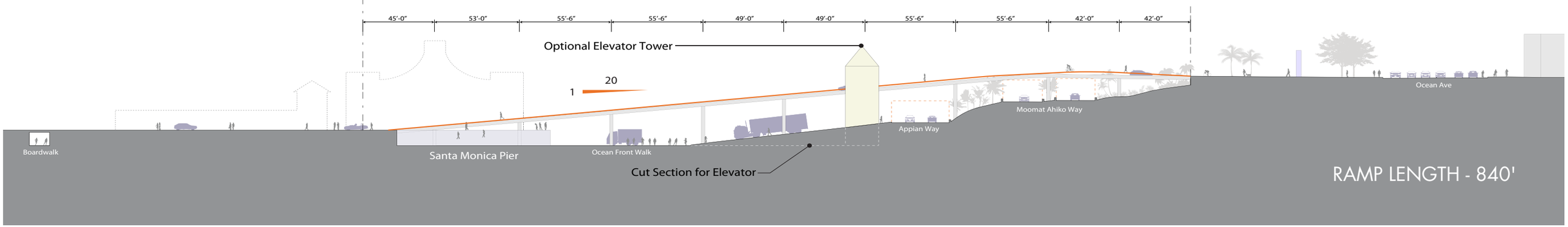


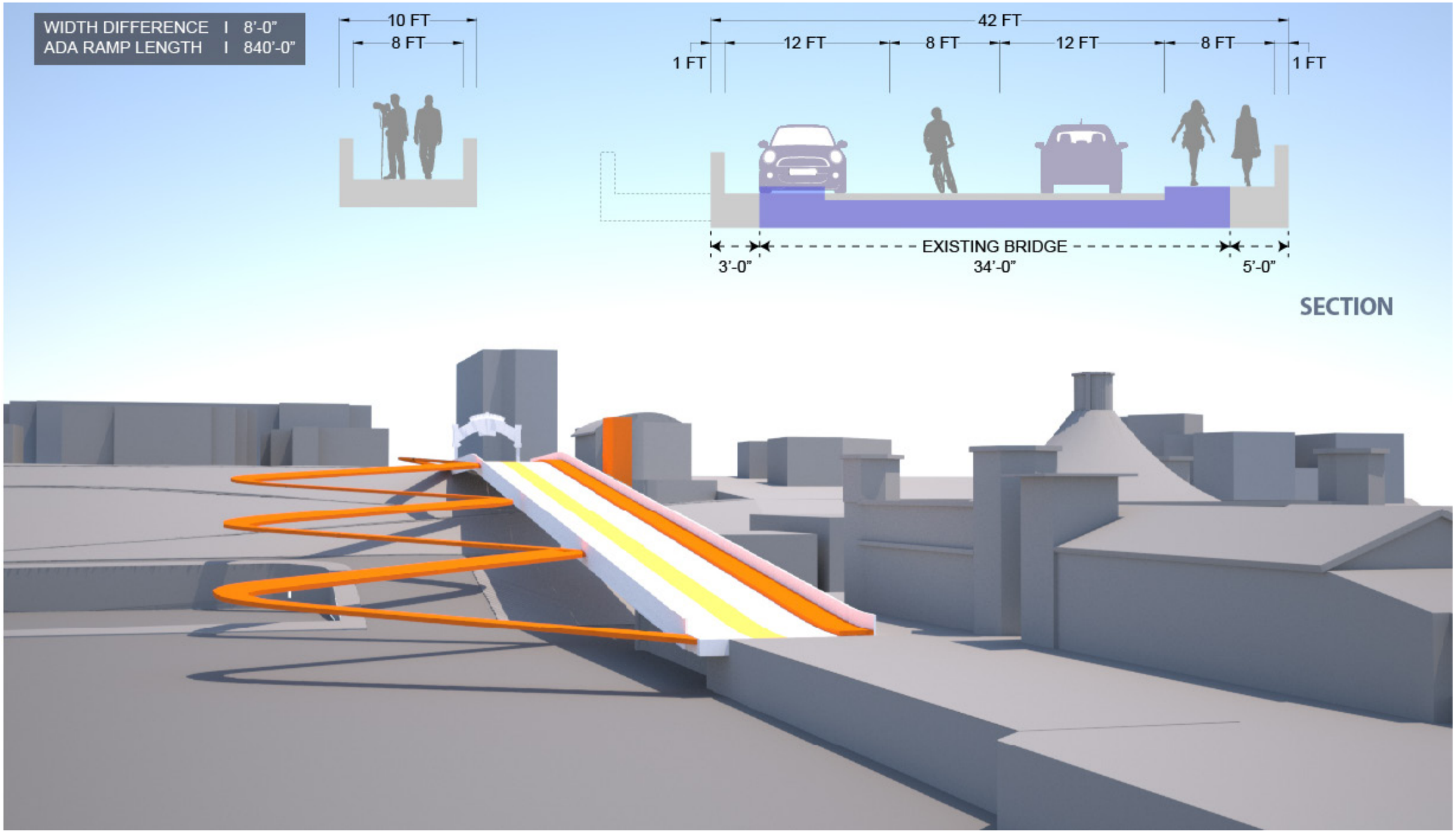



ADA RAMP
10% SLOPE VEHICULAR BRIDGE

ALTERNATIVE 2 CONCEPT A | PLAN & ELEVATION



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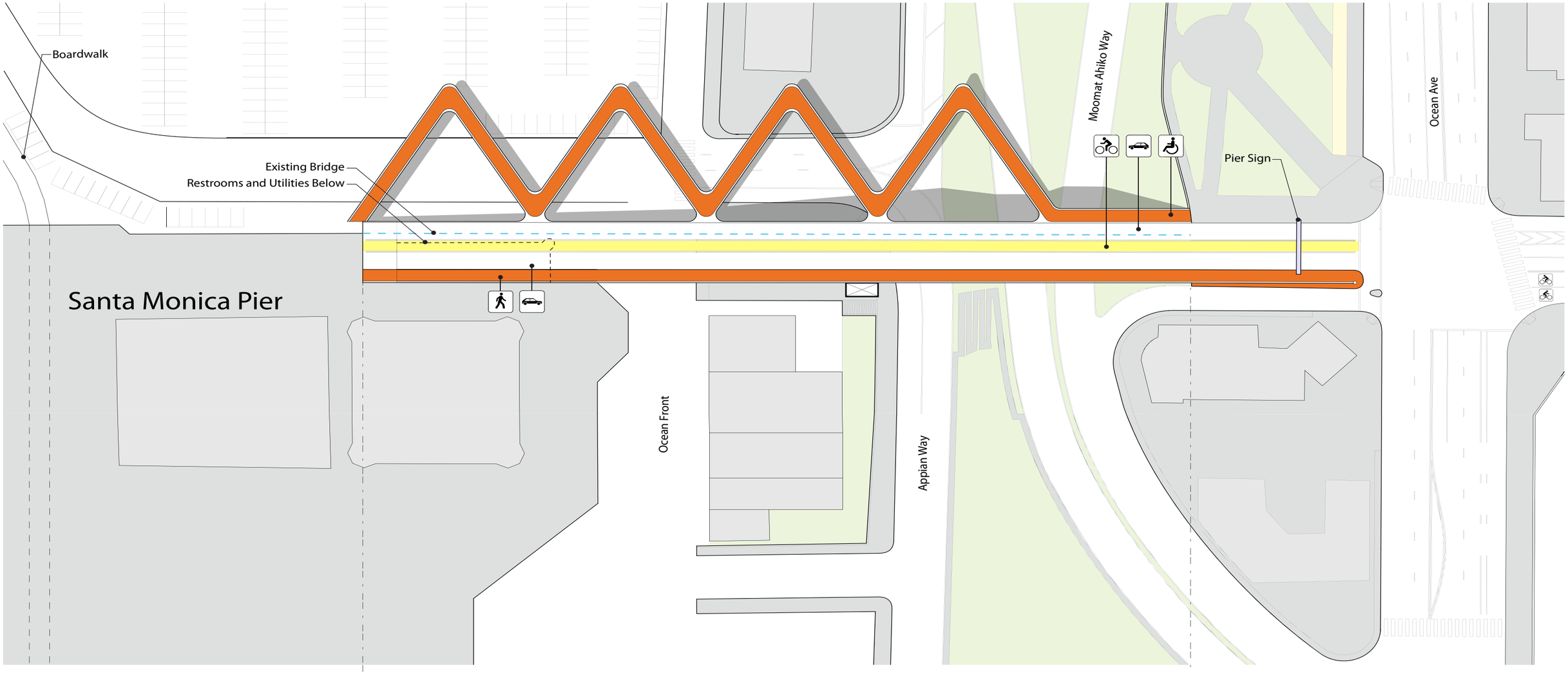
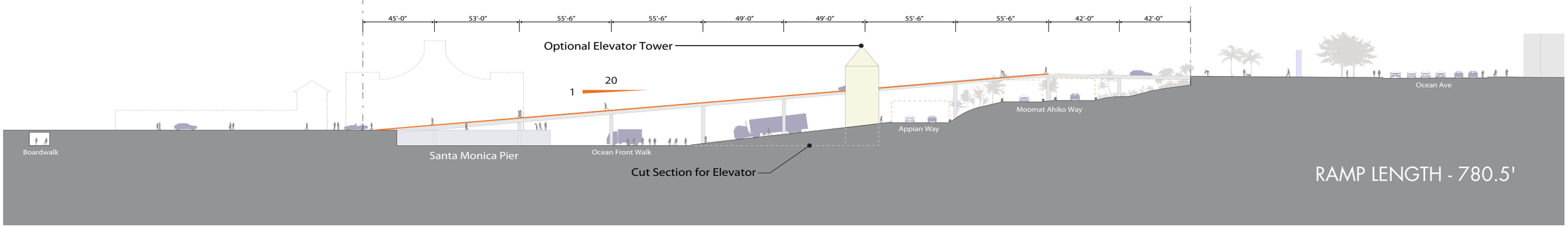
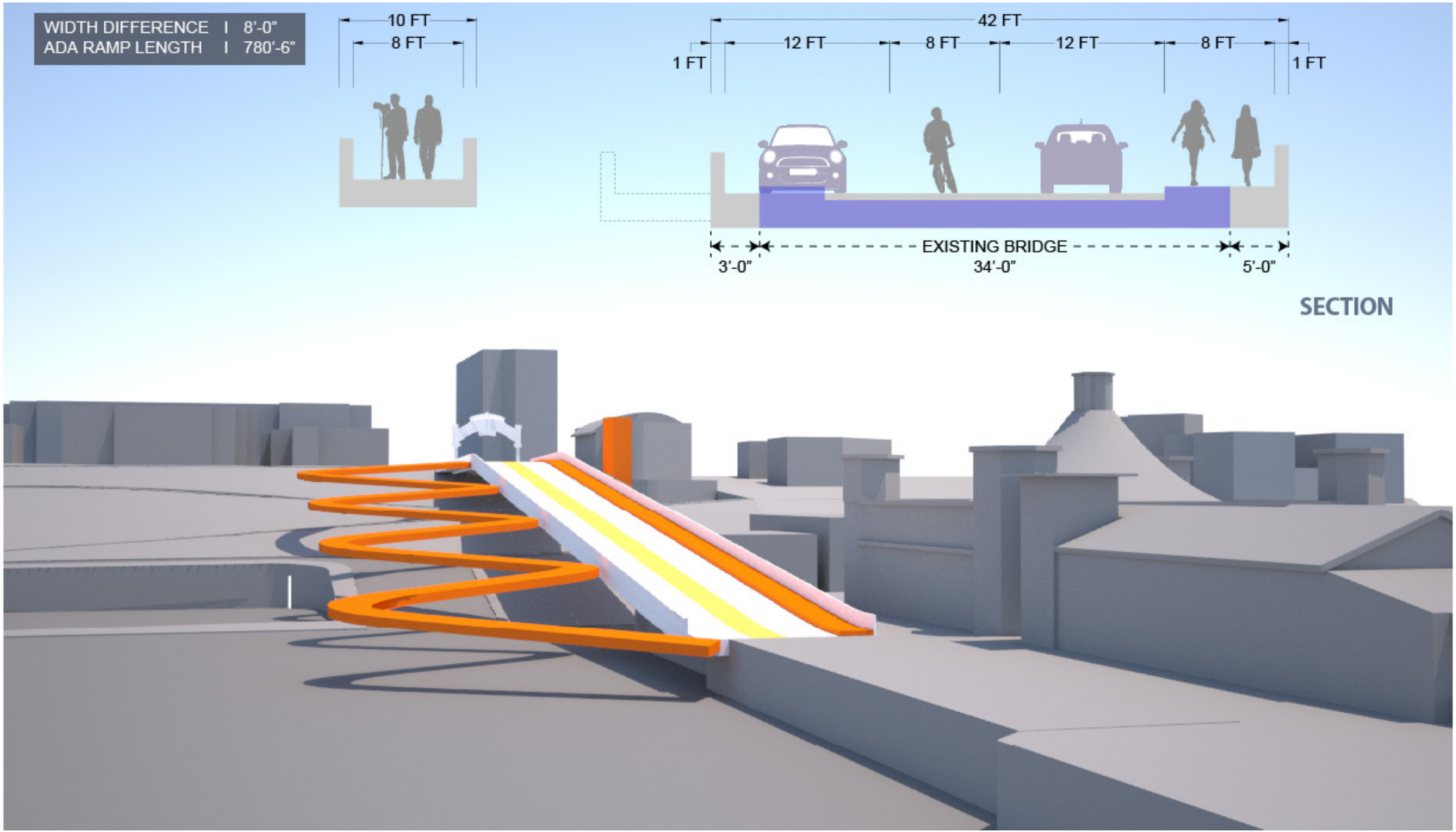
ADA RAMP LENGTH I 840'-0"
10 FT
8 FT
42 FT
1 FT
12 FT
8 FT
12 FT
8 FT
1 FT
EXISTING BRIDGE
3'-0"
34'-0"
5'-0"
SECTION

ALTERNATIVE 2 CONCEPT B | PLAN & ELEVATION



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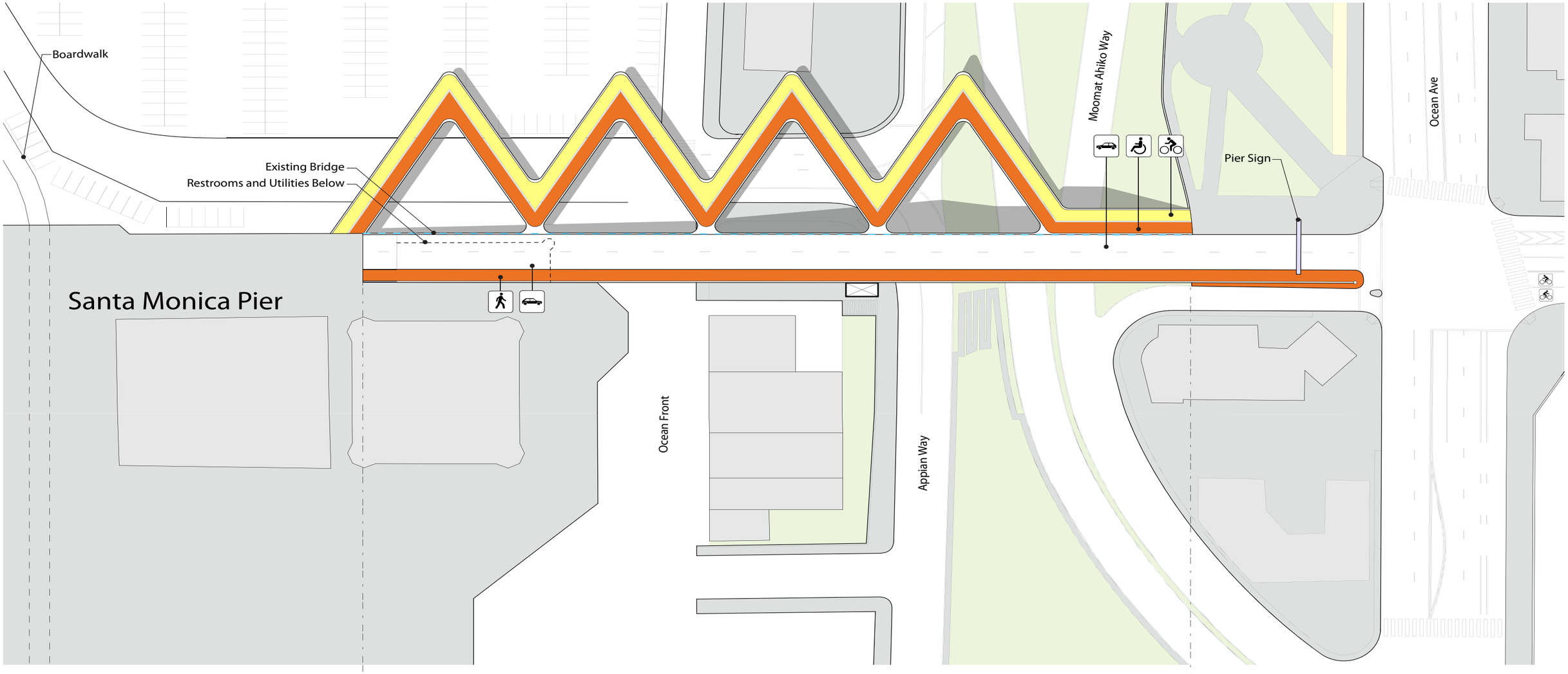
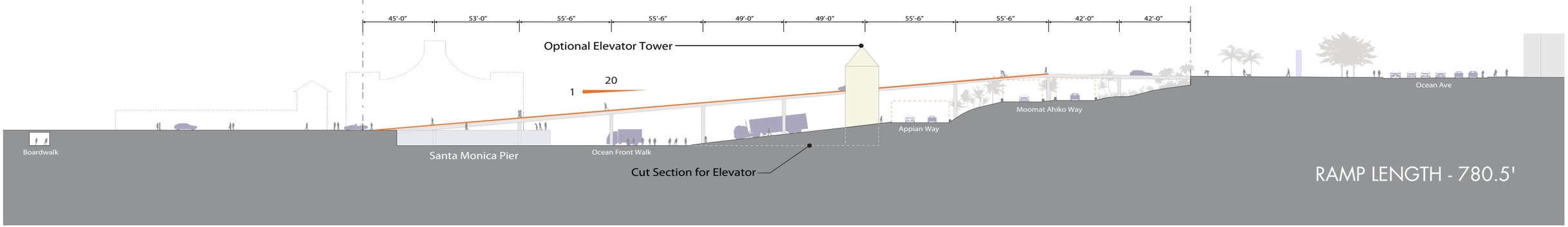
8 FT
12 FT
8 FT
1 FT
EXISTING BRIDGE
3'-0"
34'-0"
5'-0"
SECTION

ALTERNATIVE 2 CONCEPT B2 | PLAN & ELEVATION





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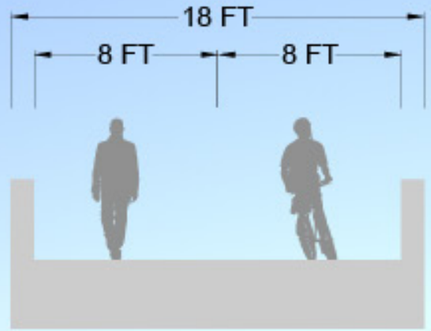
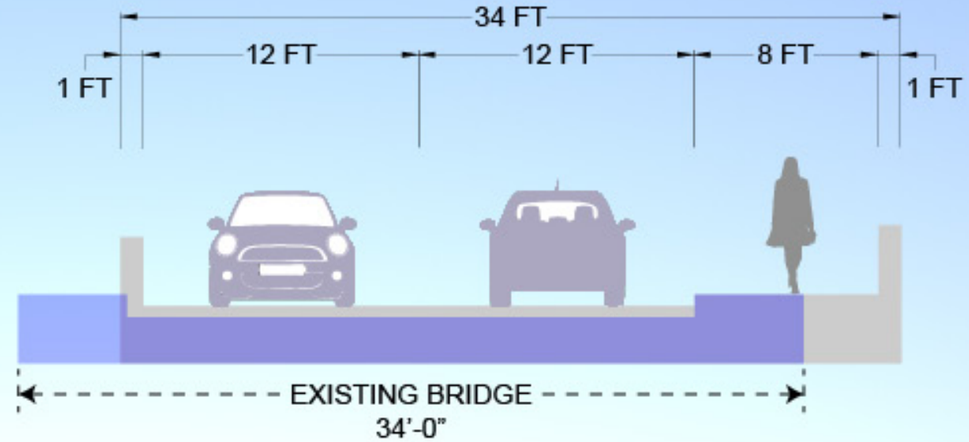
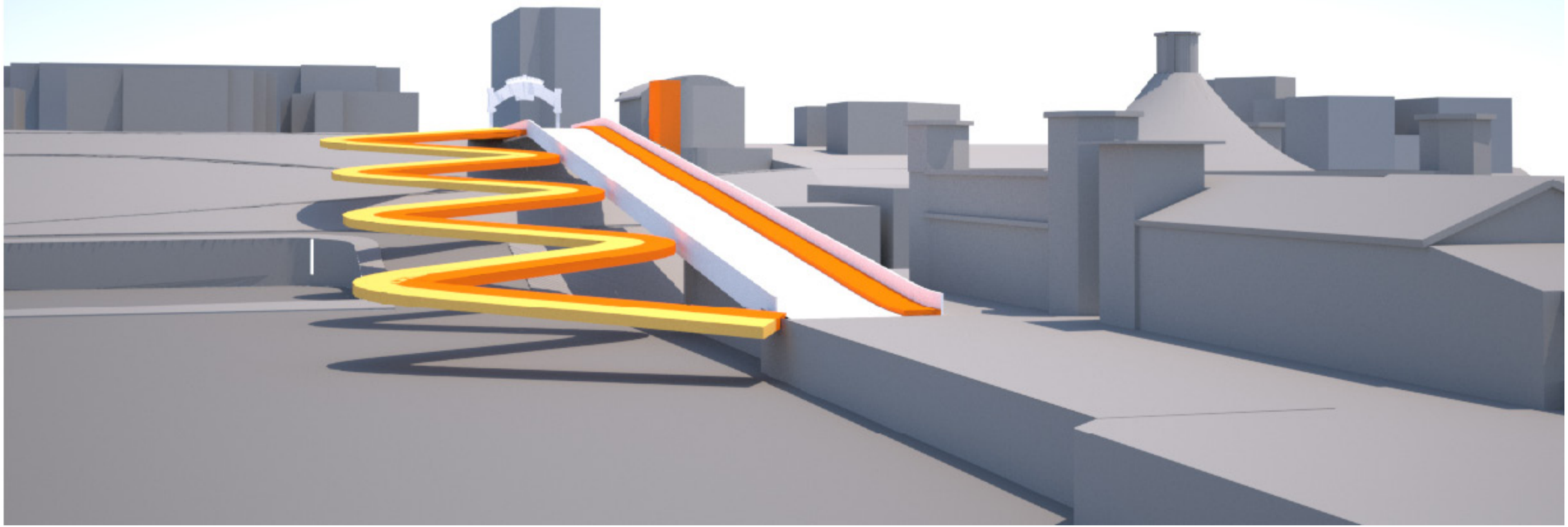
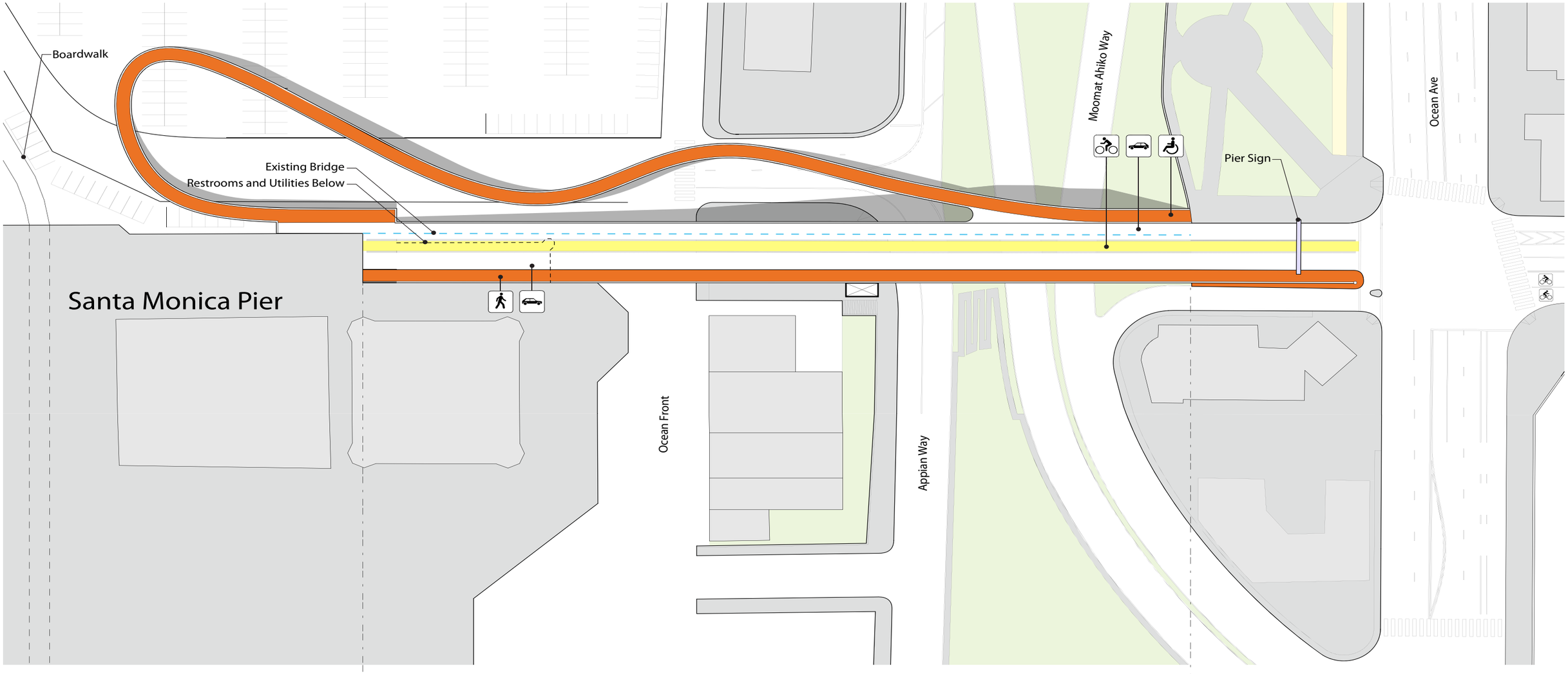


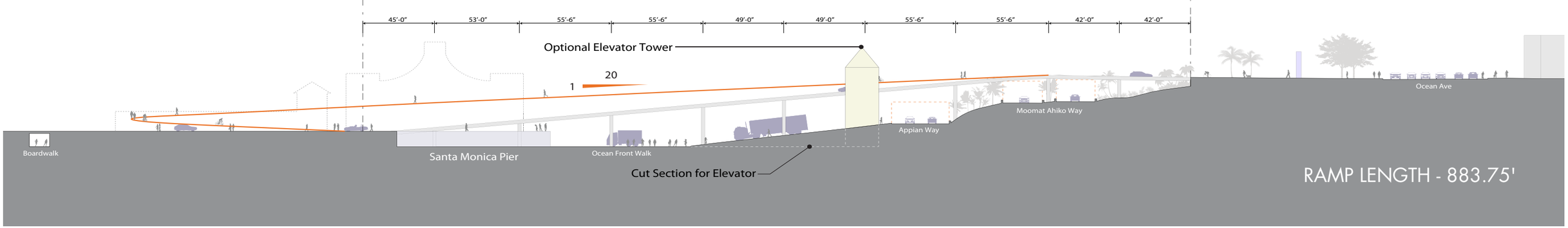


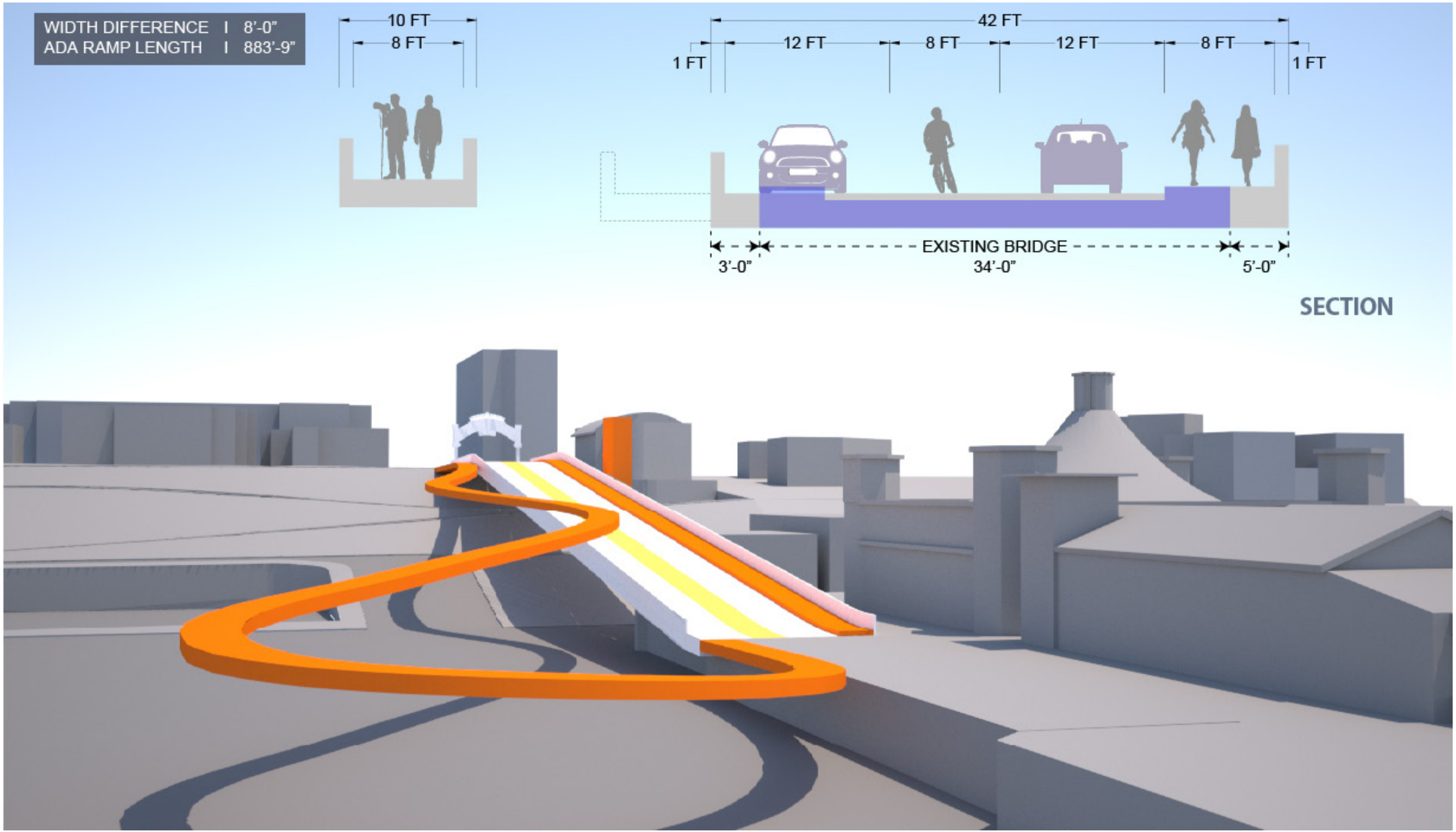
SECTION



ALTERNATIVE 2 CONCEPT C | PLAN & ELEVATION



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8 FT
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1 FT
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8 FT
12 FT
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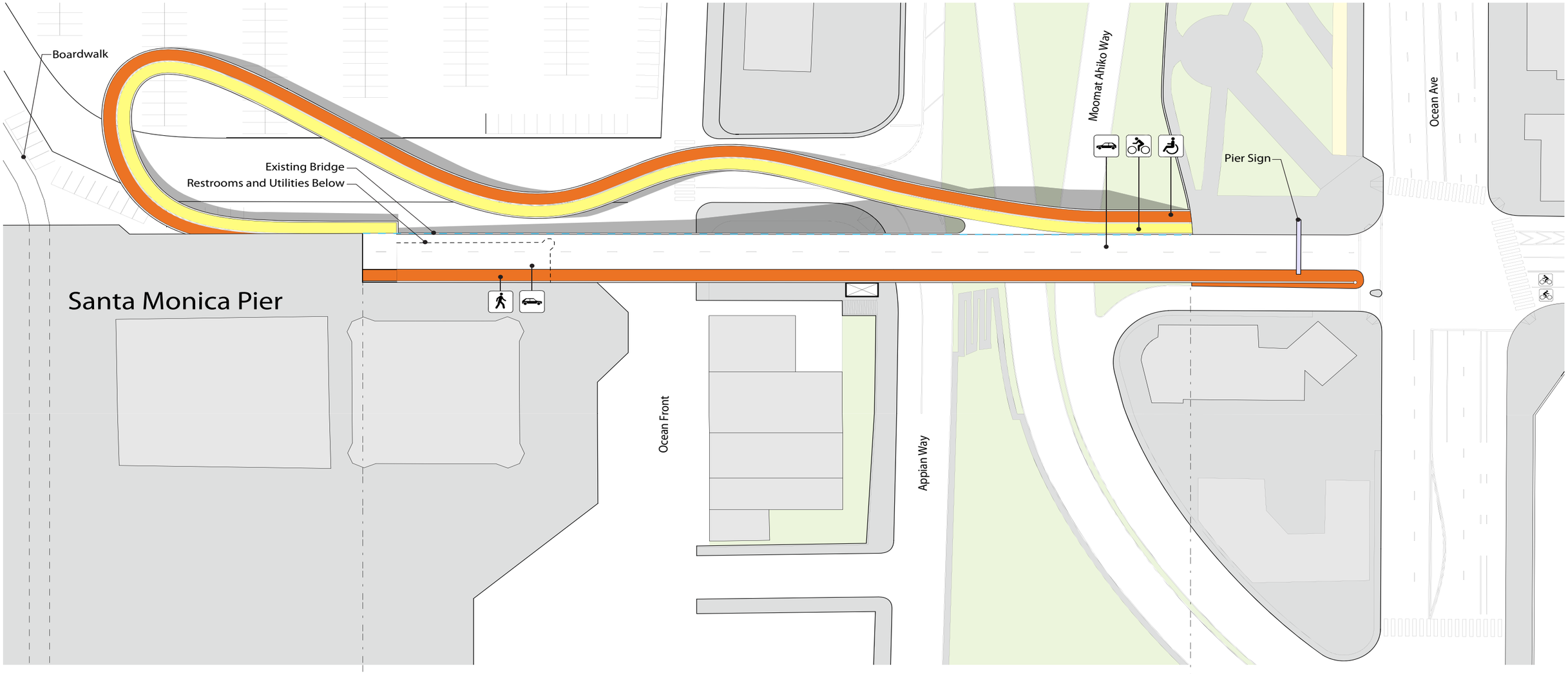
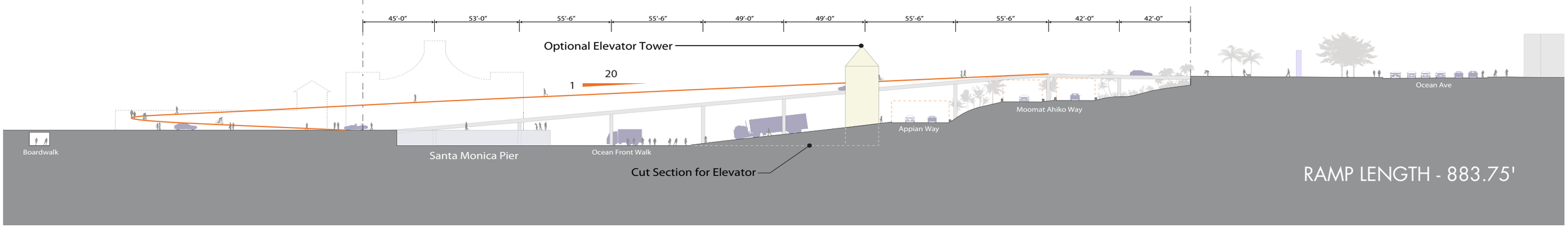
1 FT
EXISTING BRIDGE
3'-0"
34'-0"
5'-0"
SECTION

ALTERNATIVE 2 CONCEPT C2 | PLAN & ELEVATION





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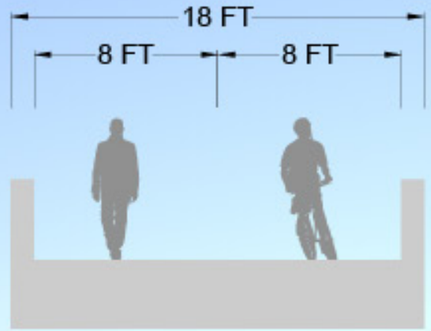
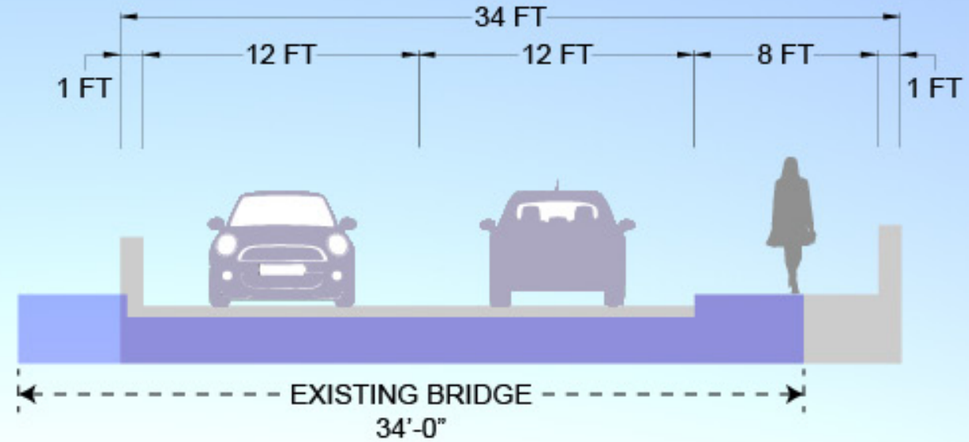
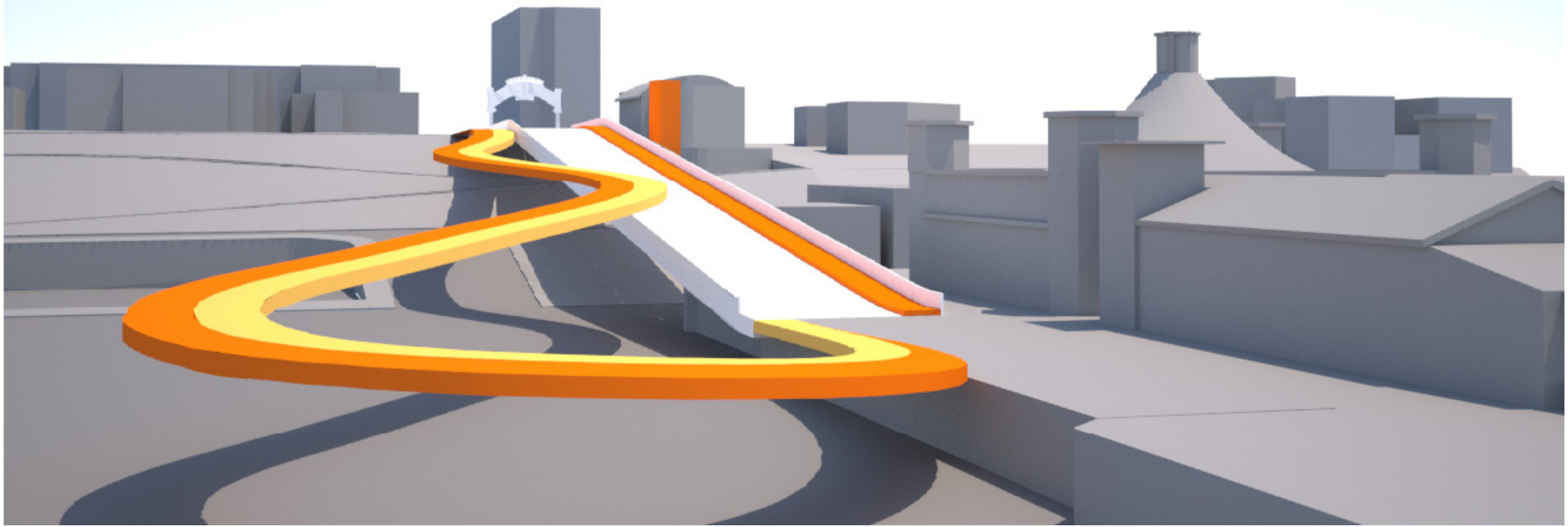
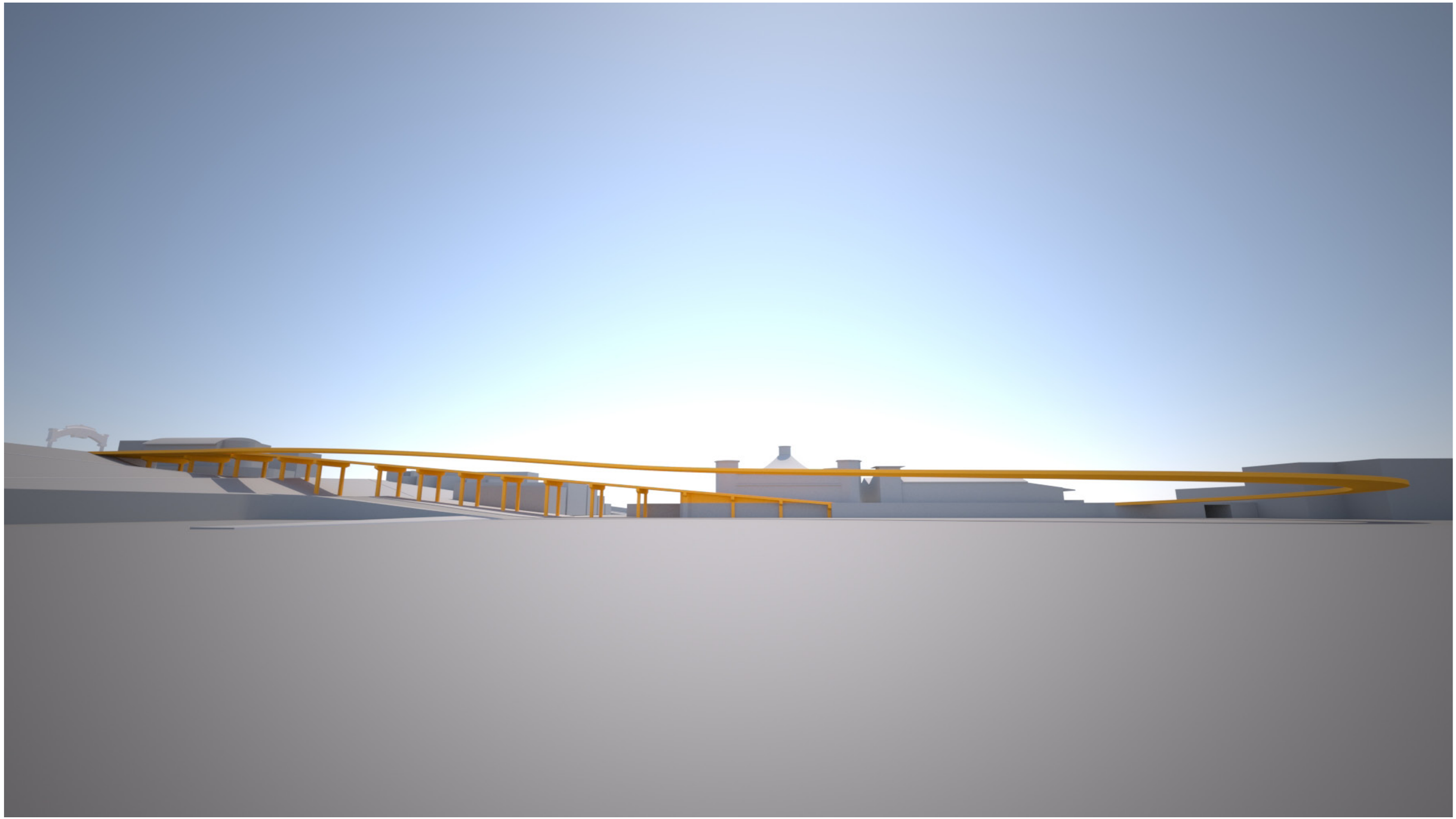


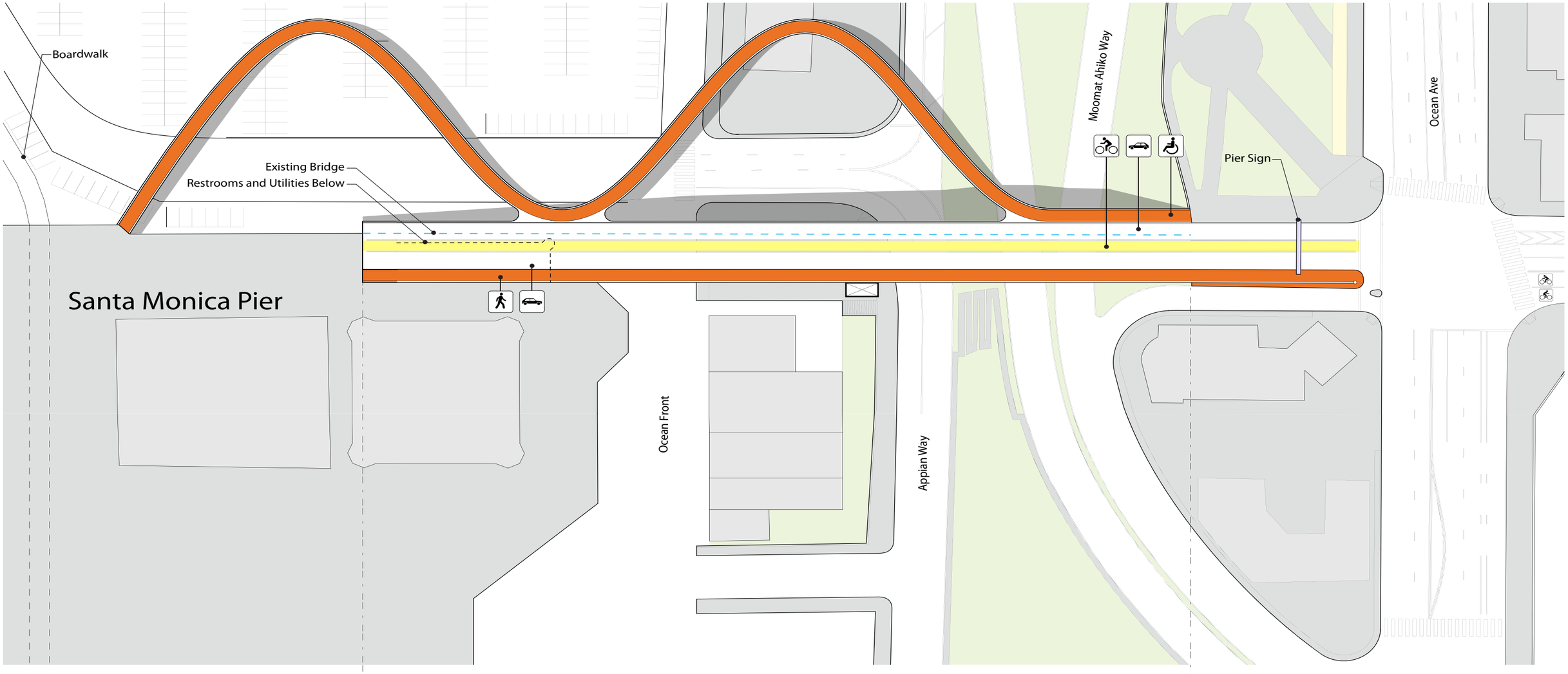


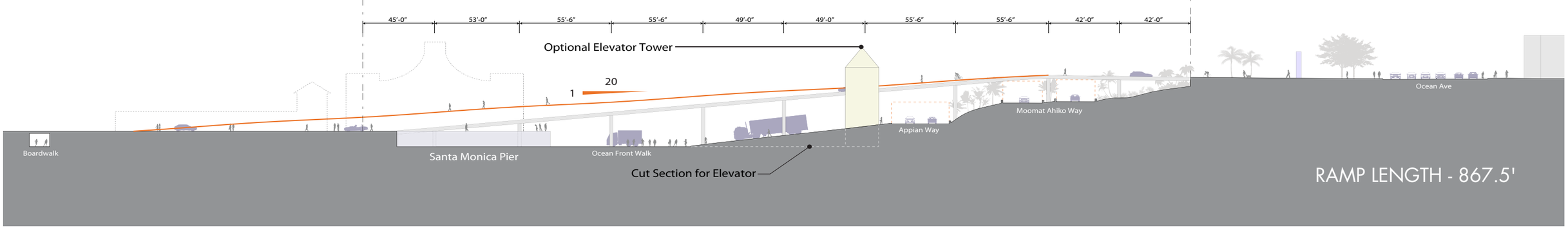
SECTION



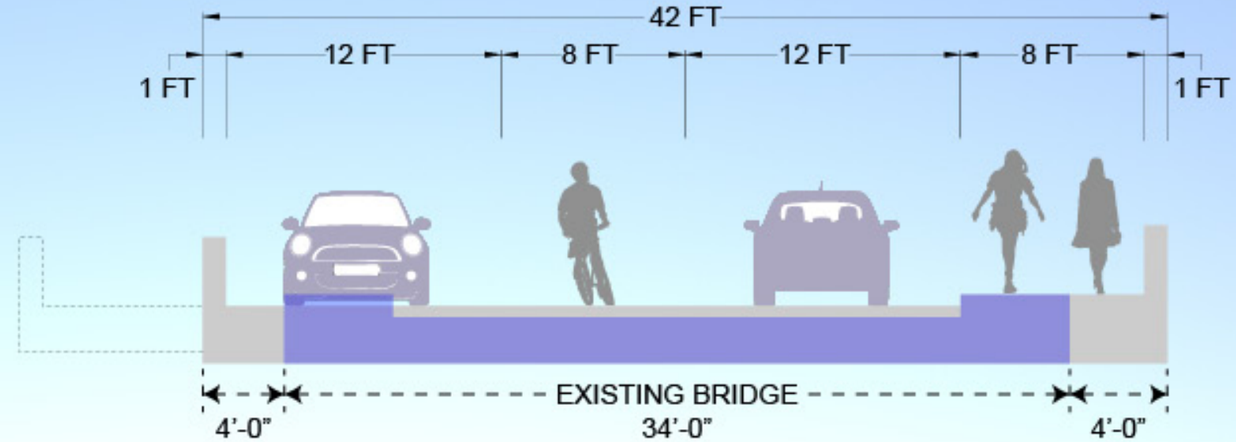


ALTERNATIVE 2 CONCEPT D | PLAN & ELEVATION

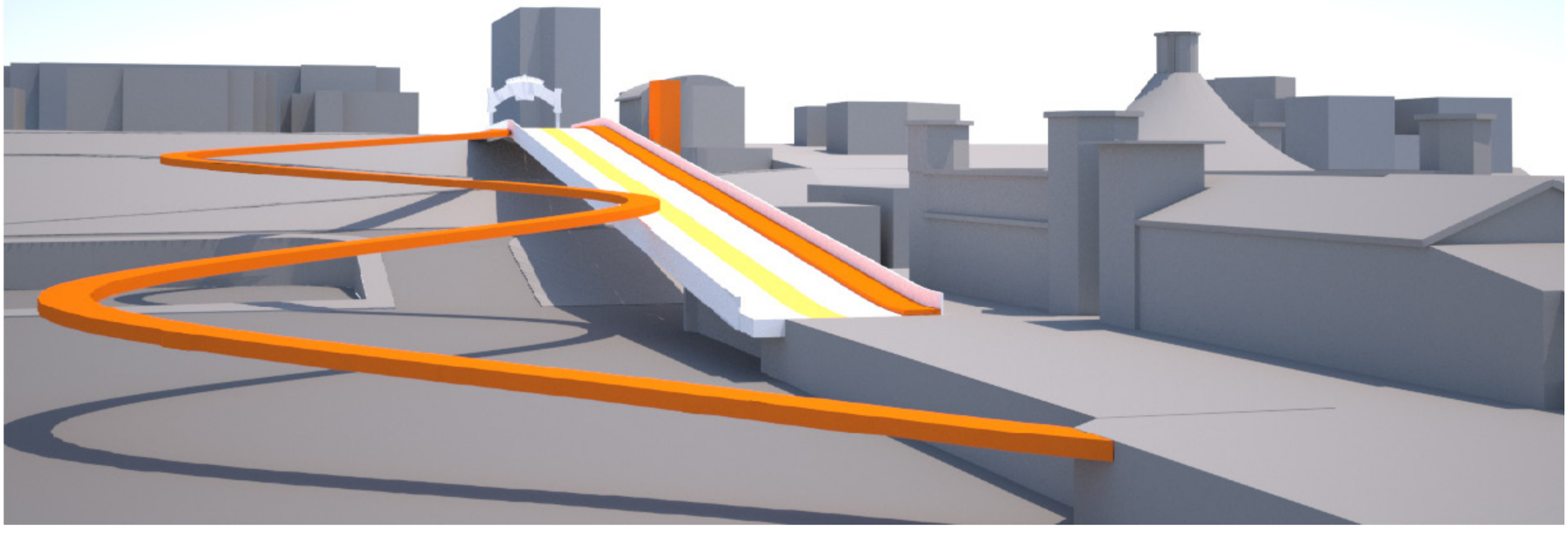




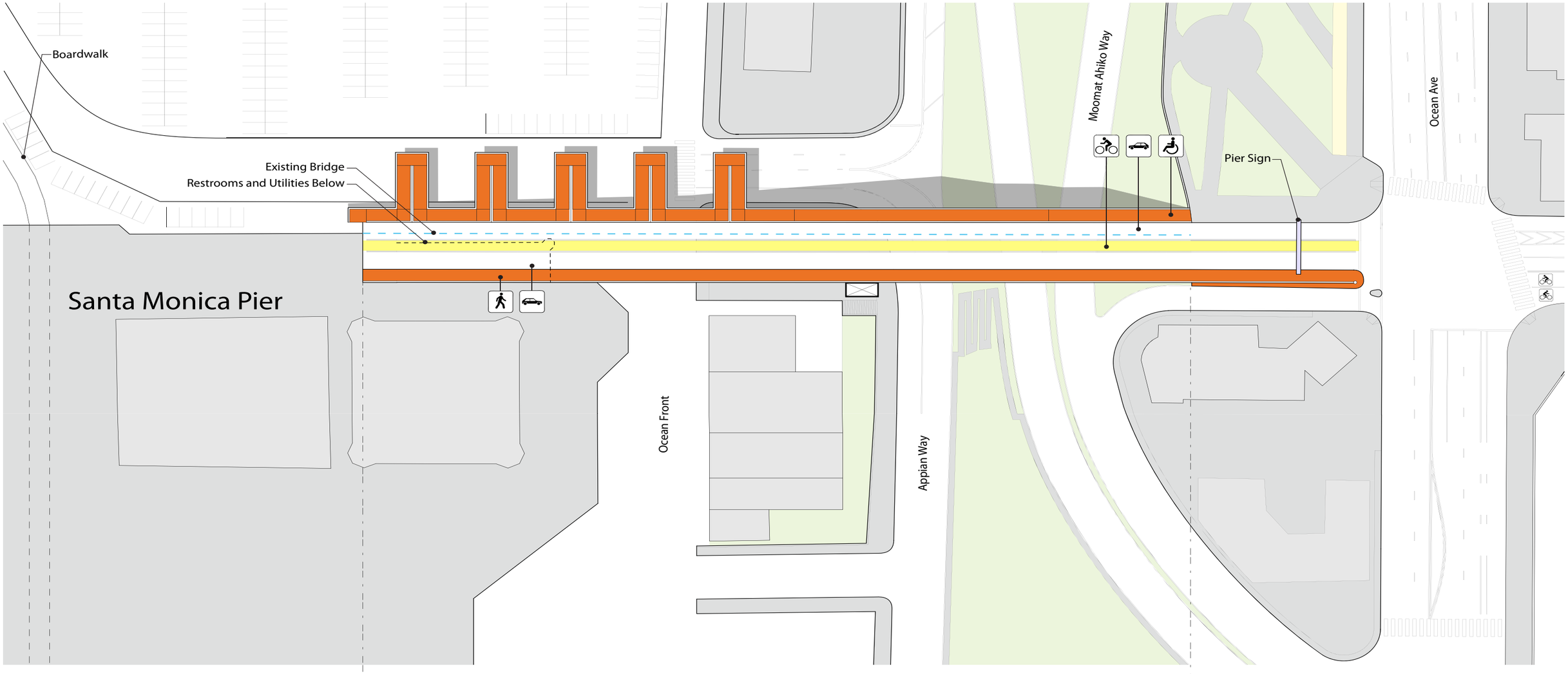
WIDTH DIFFERENCE | 8'-0"
ADA RAMP LENGTH | 867'-6"

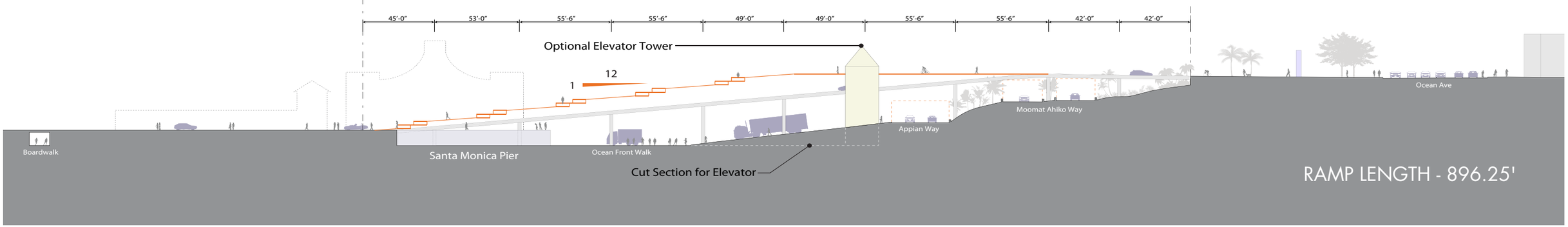


SECTION



ALTERNATIVE 2 CONCEPT E | PLAN & ELEVATION





WIDTH DIFFERENCE | 8'-0"
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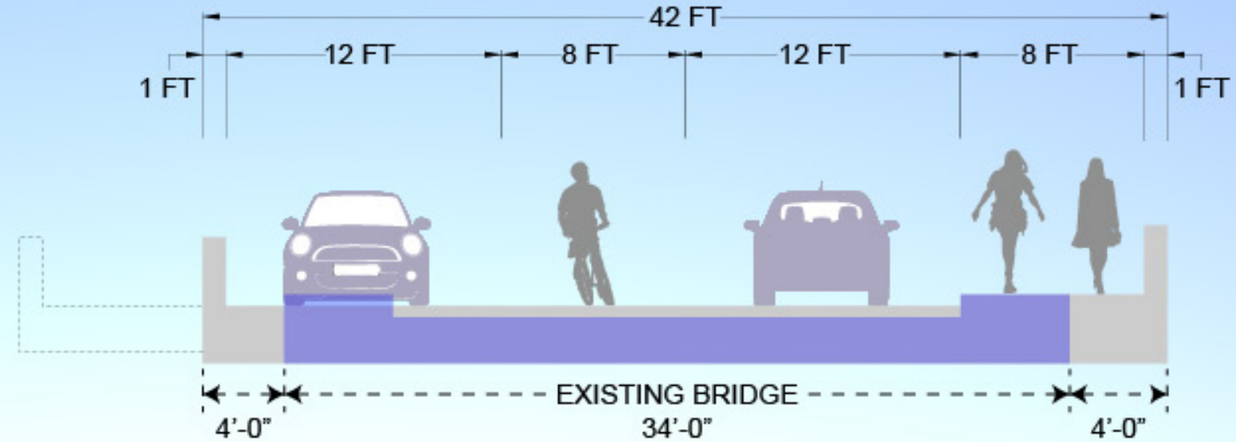
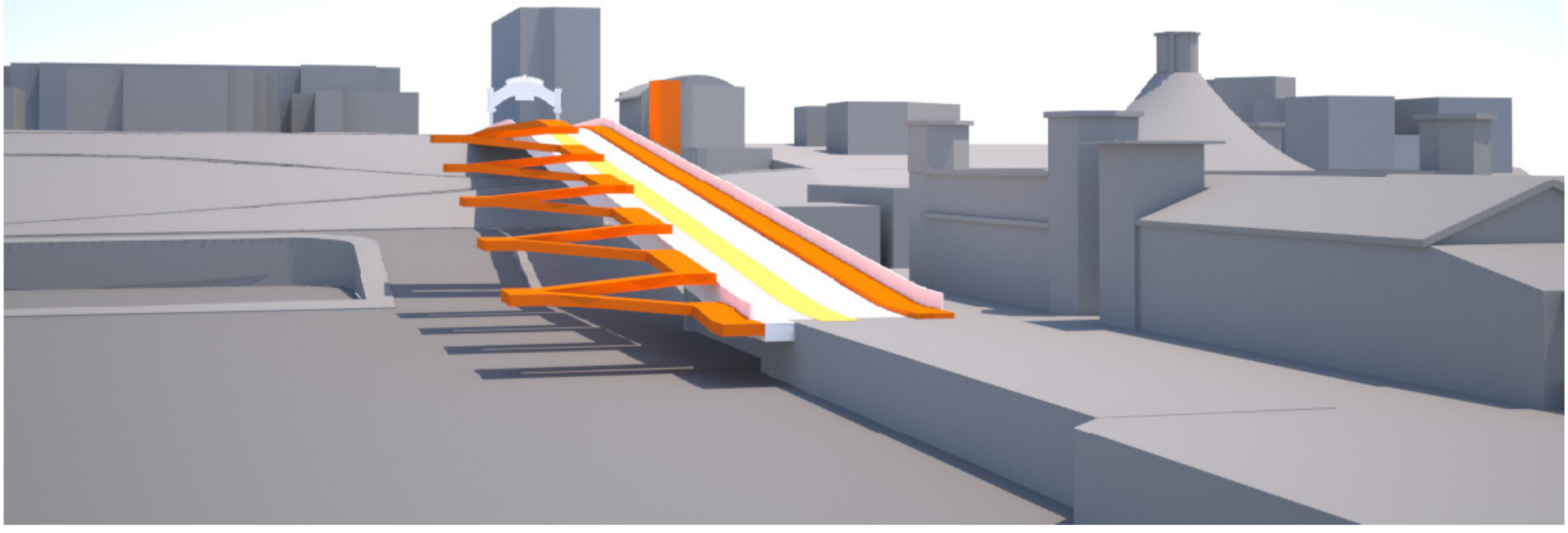
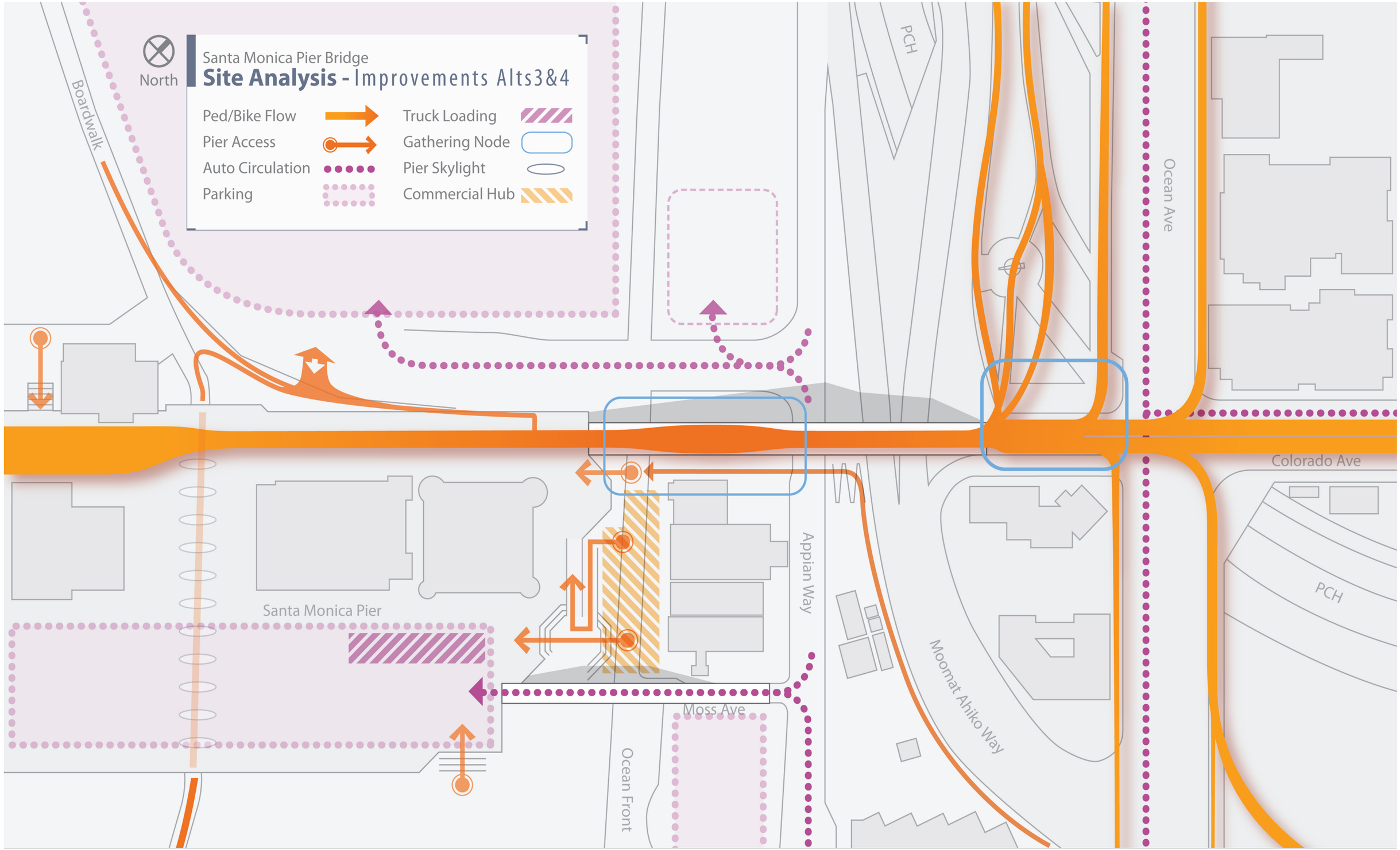
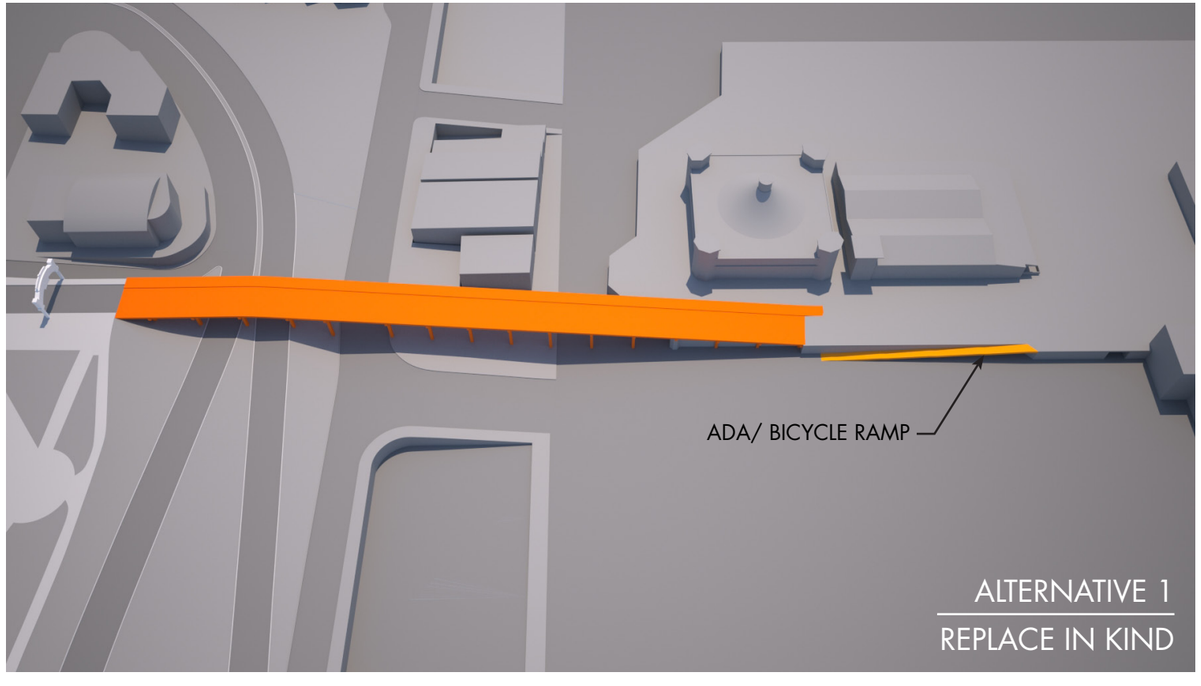


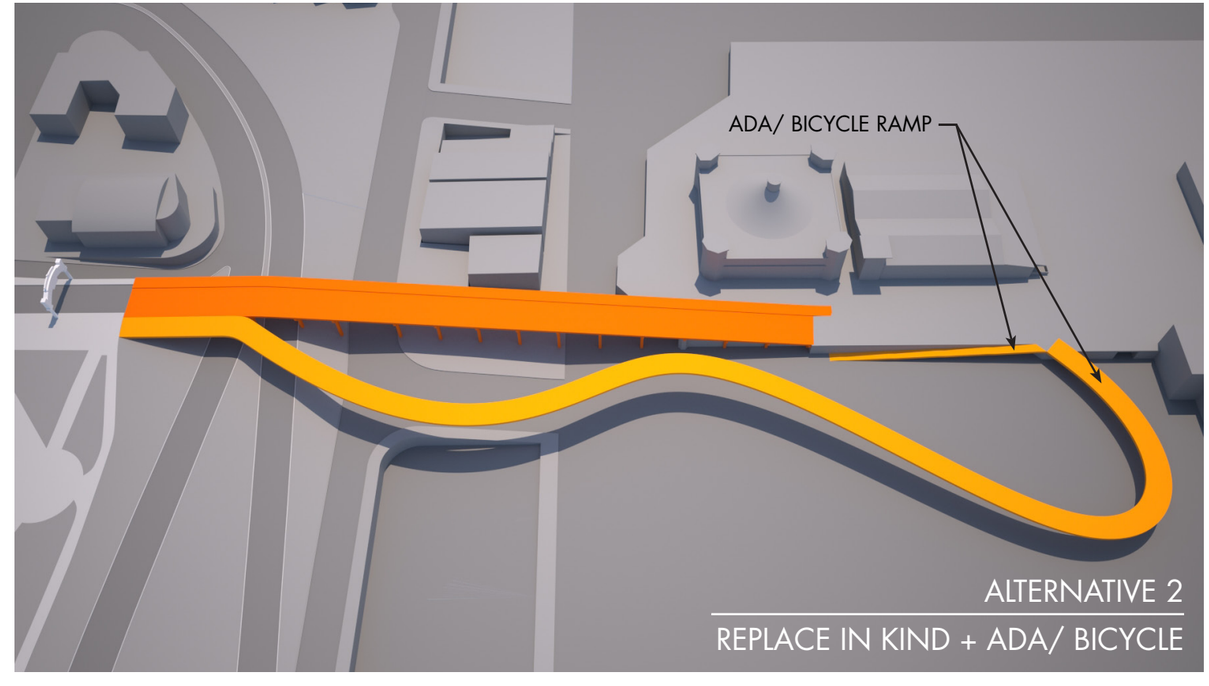
SECTION

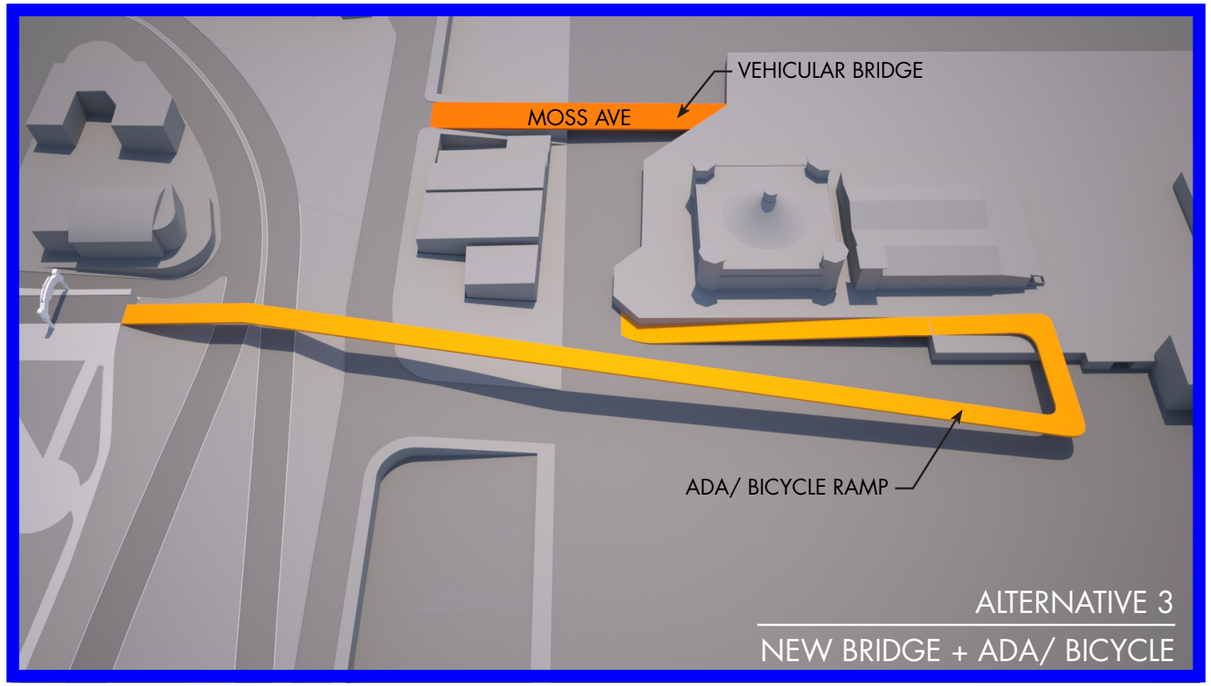


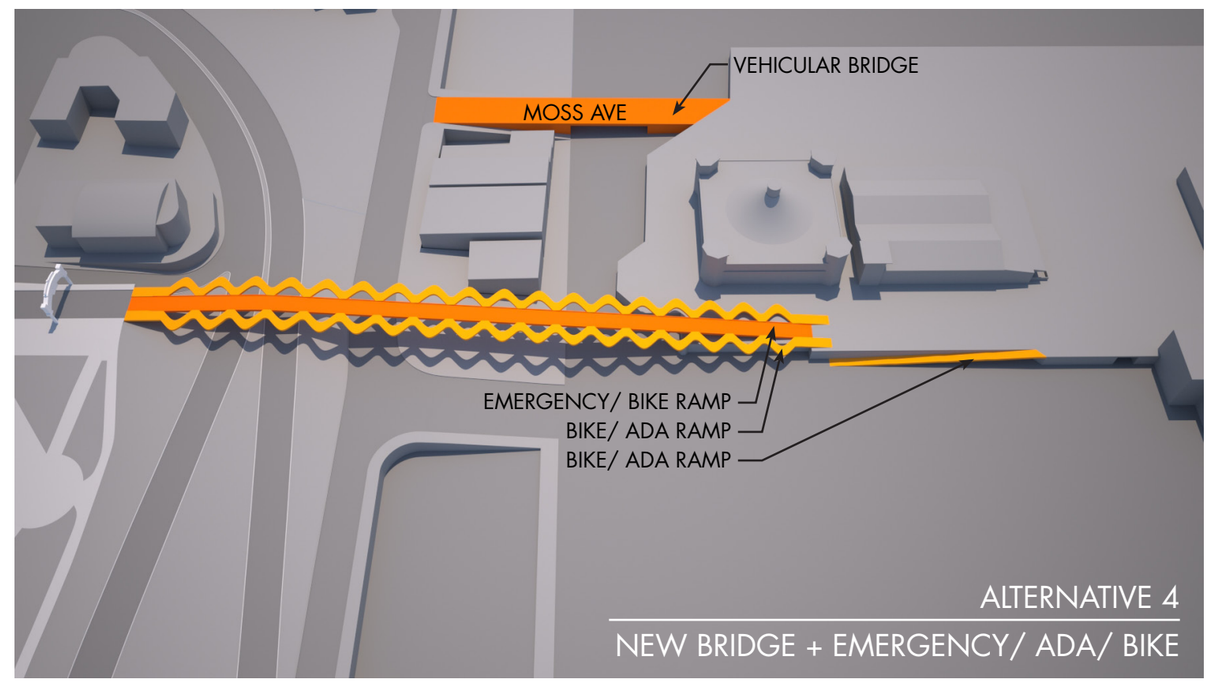

North
Santa Monica Pier Bridge
Site Analysis - Improvements Alts3&4
Ped/Bike Flow
Pier Access
Auto Circulation
Parking
Truck Loading
Gathering Node
Pier Skylight
Commercial Hub
Boardwalk
PCH
Ocean Ave
Colorado Ave
Santa Monica Pier
Appian Way
Moss Ave
Ocean Front
Moomat Ahiko Way
PCH

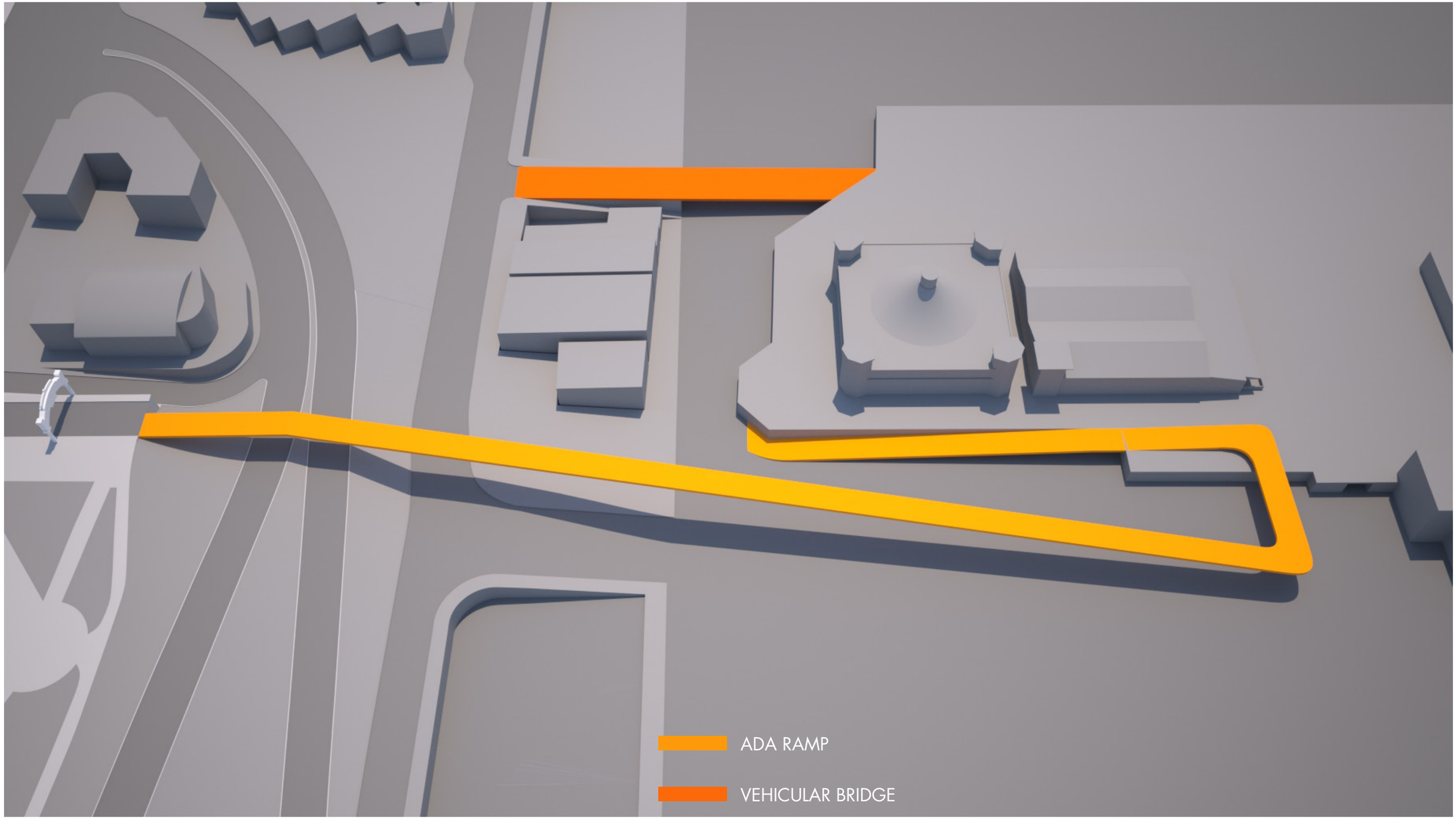
ALTERNATIVE SUMMARY



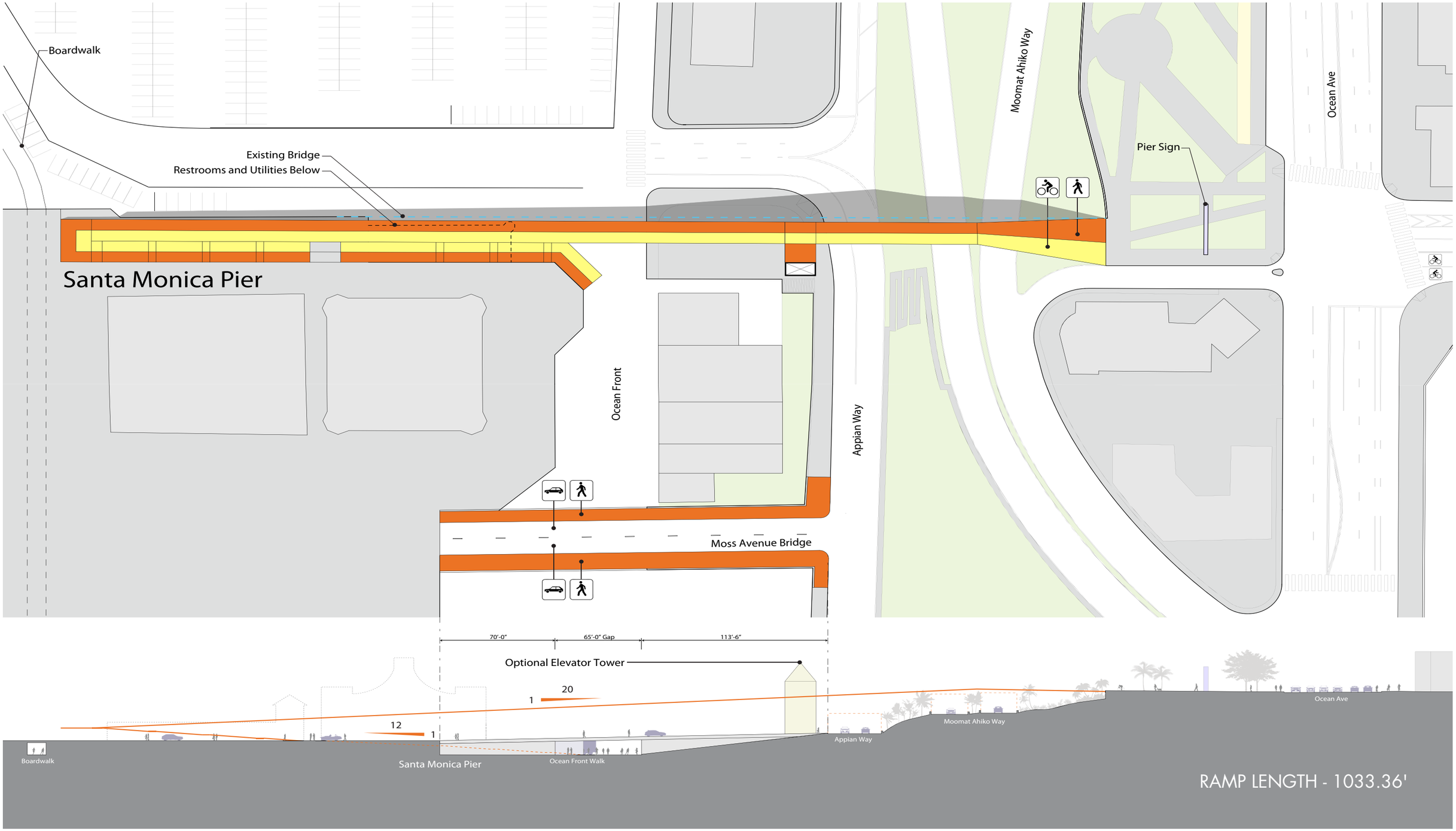


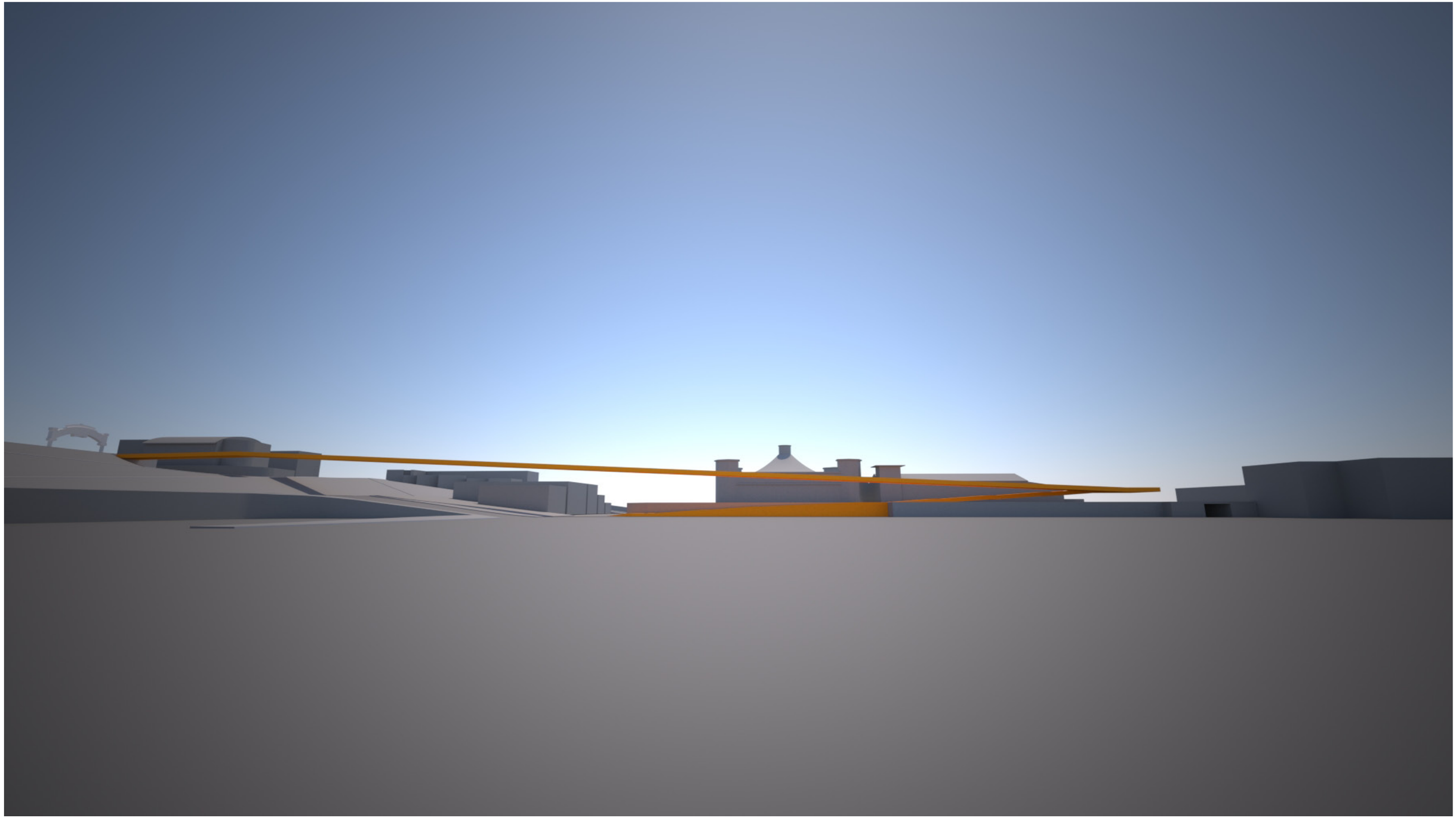




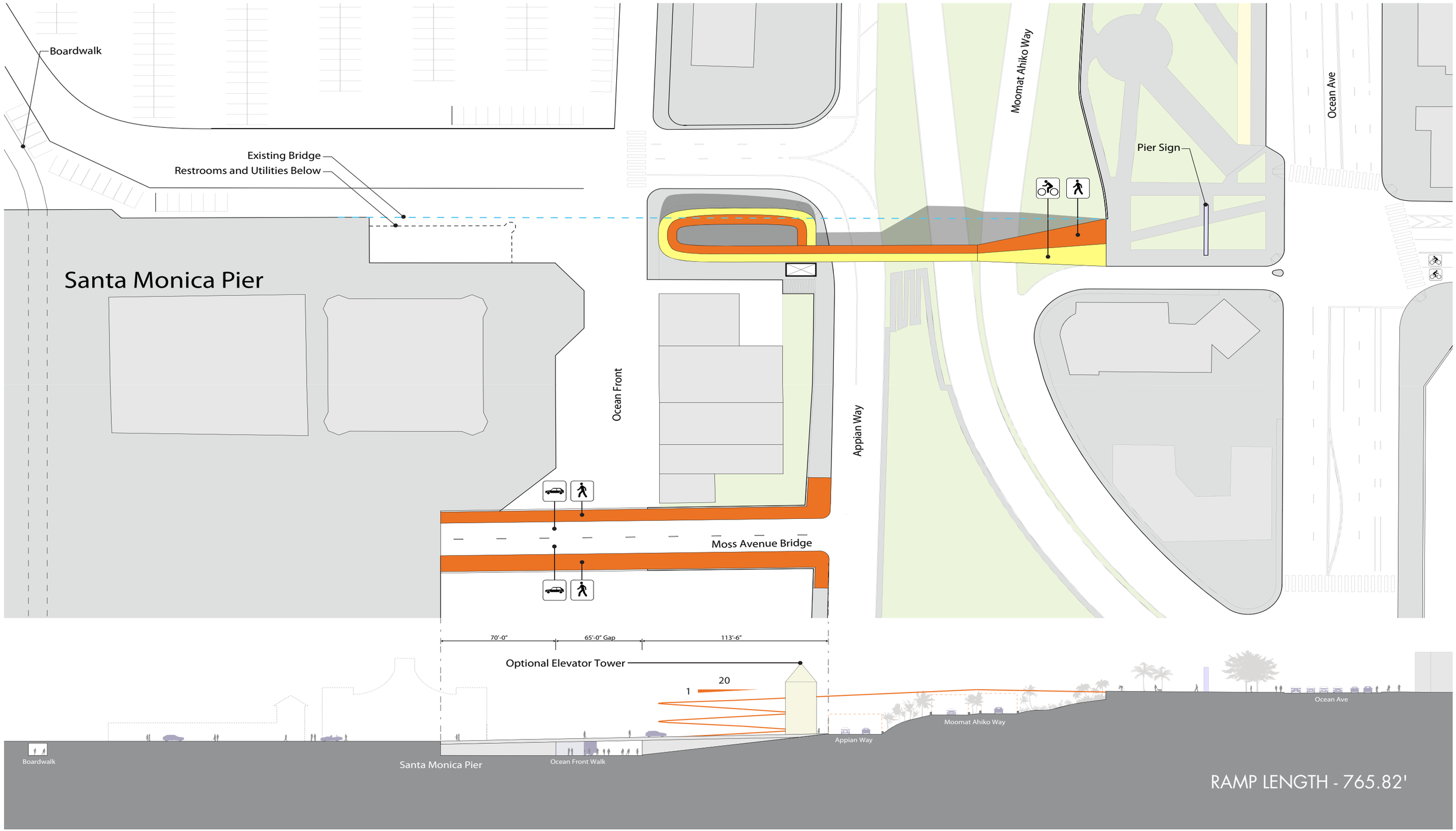

ADA RAMP
VEHICULAR BRIDGE

ALTERNATIVE 3 CONCEPT A | PLAN & ELEVATION

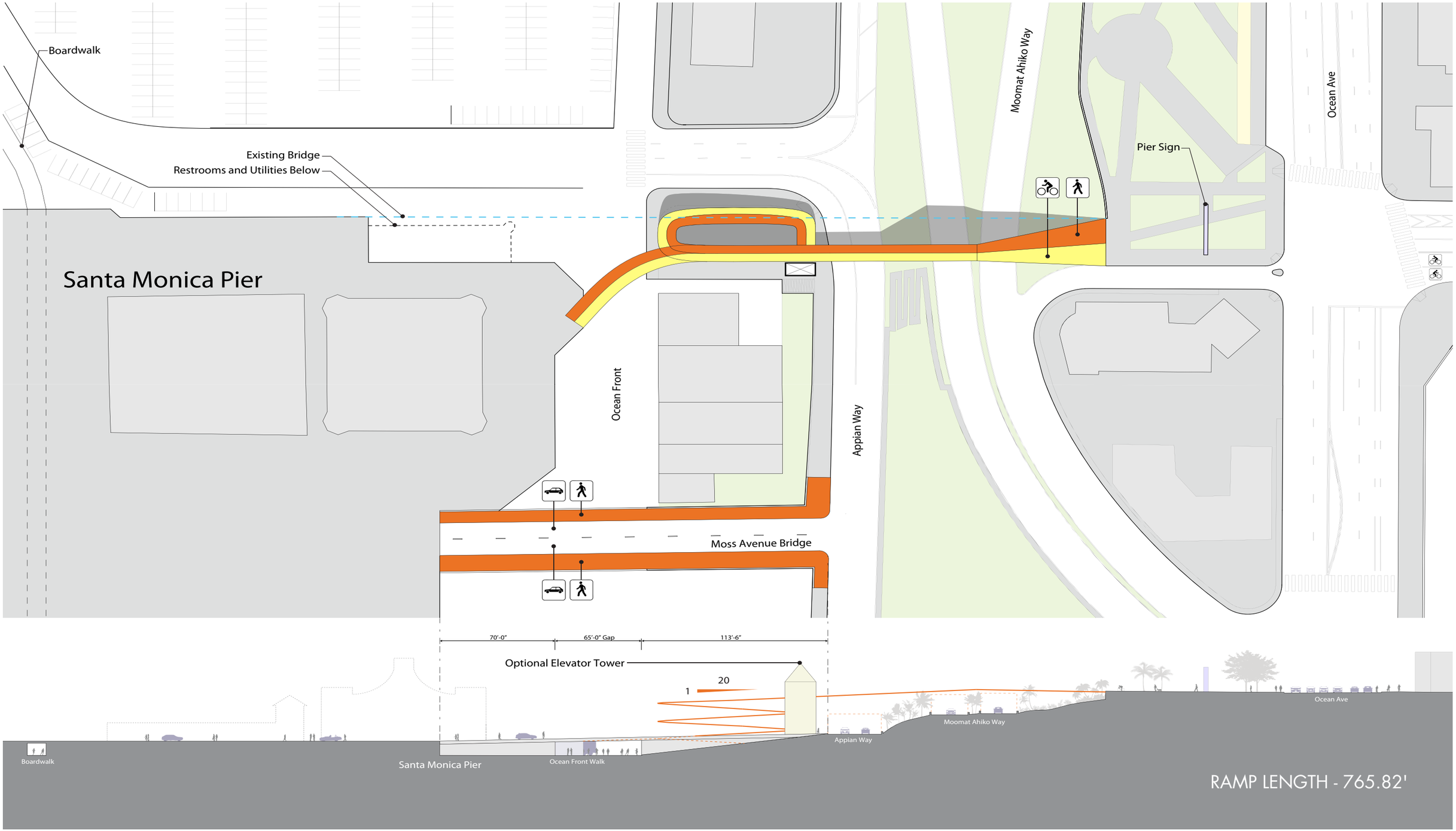




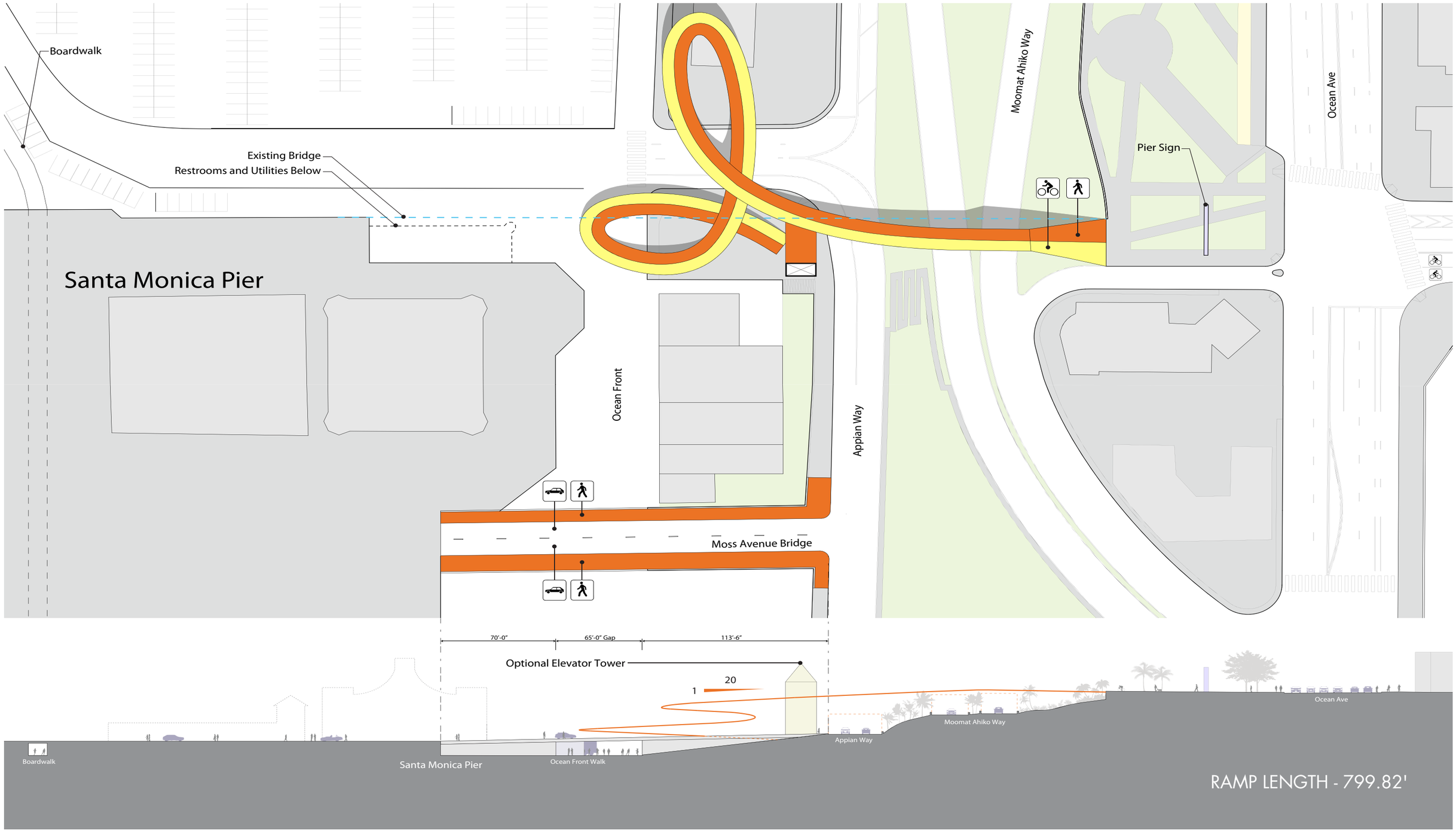
ALTERNATIVE 3 CONCEPT B | PLAN & ELEVATION



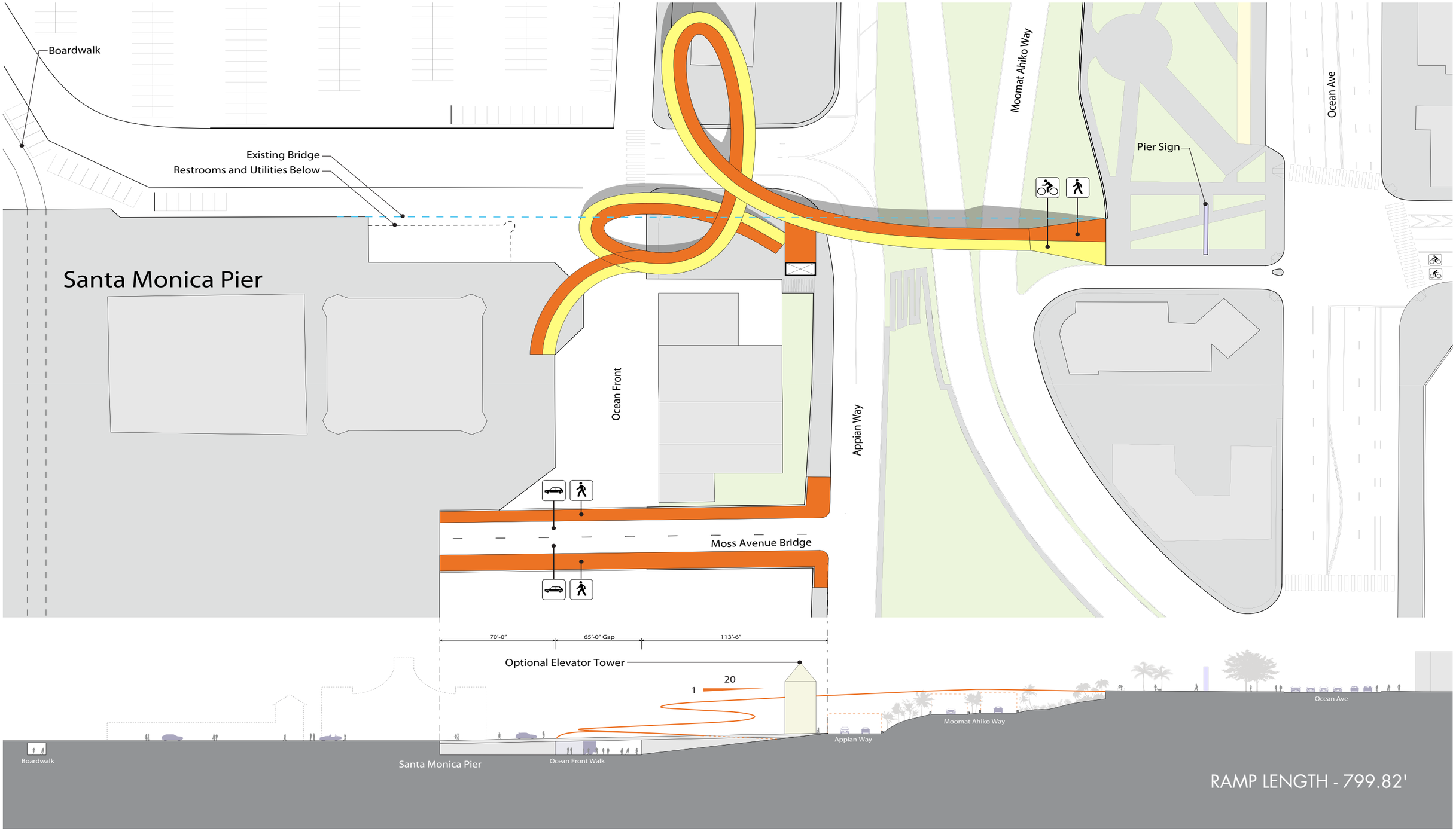
ALTERNATIVE 3 CONCEPT B2 | PLAN & ELEVATION

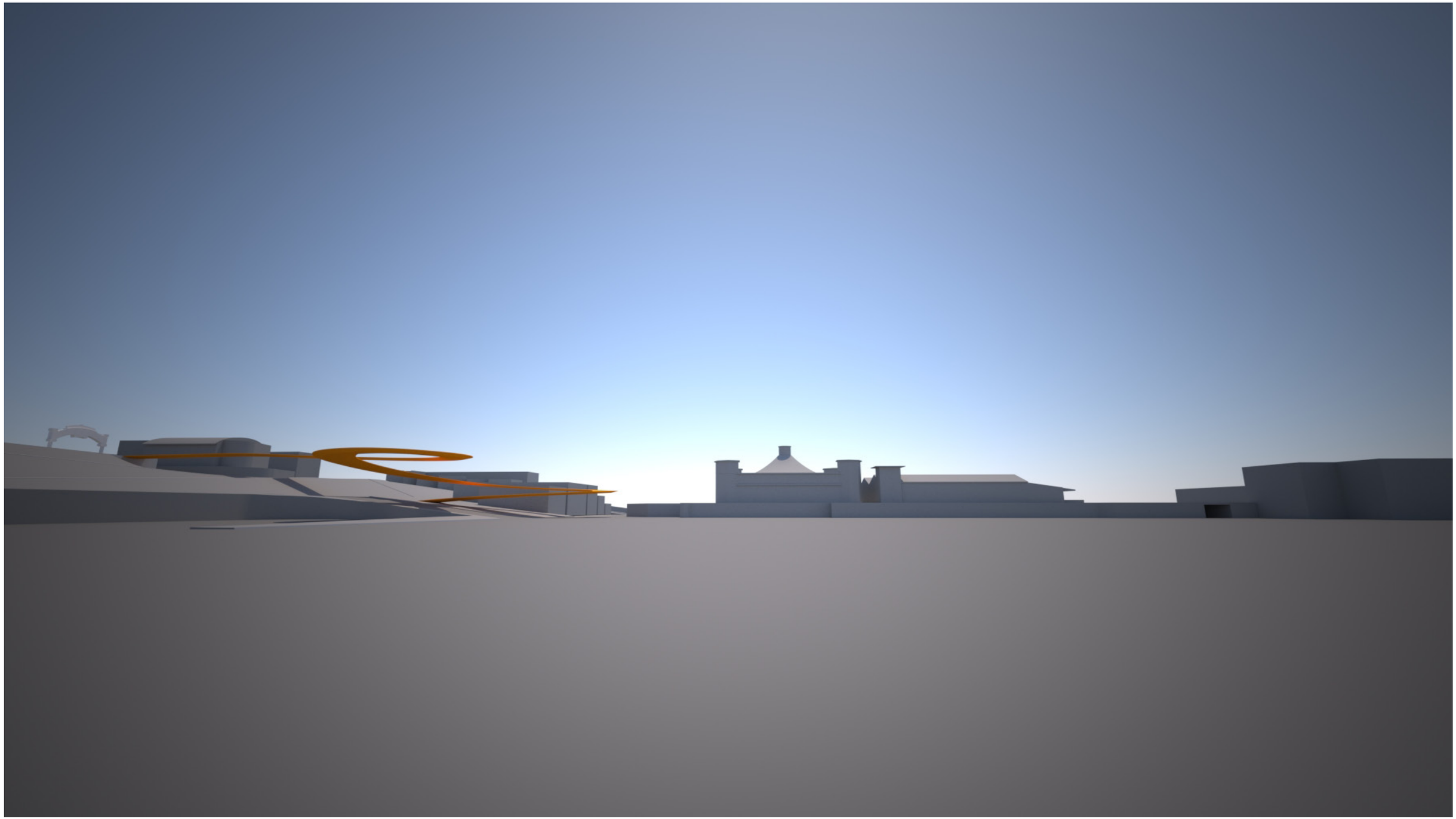


ALTERNATIVE 3 CONCEPT C | PLAN & ELEVATION

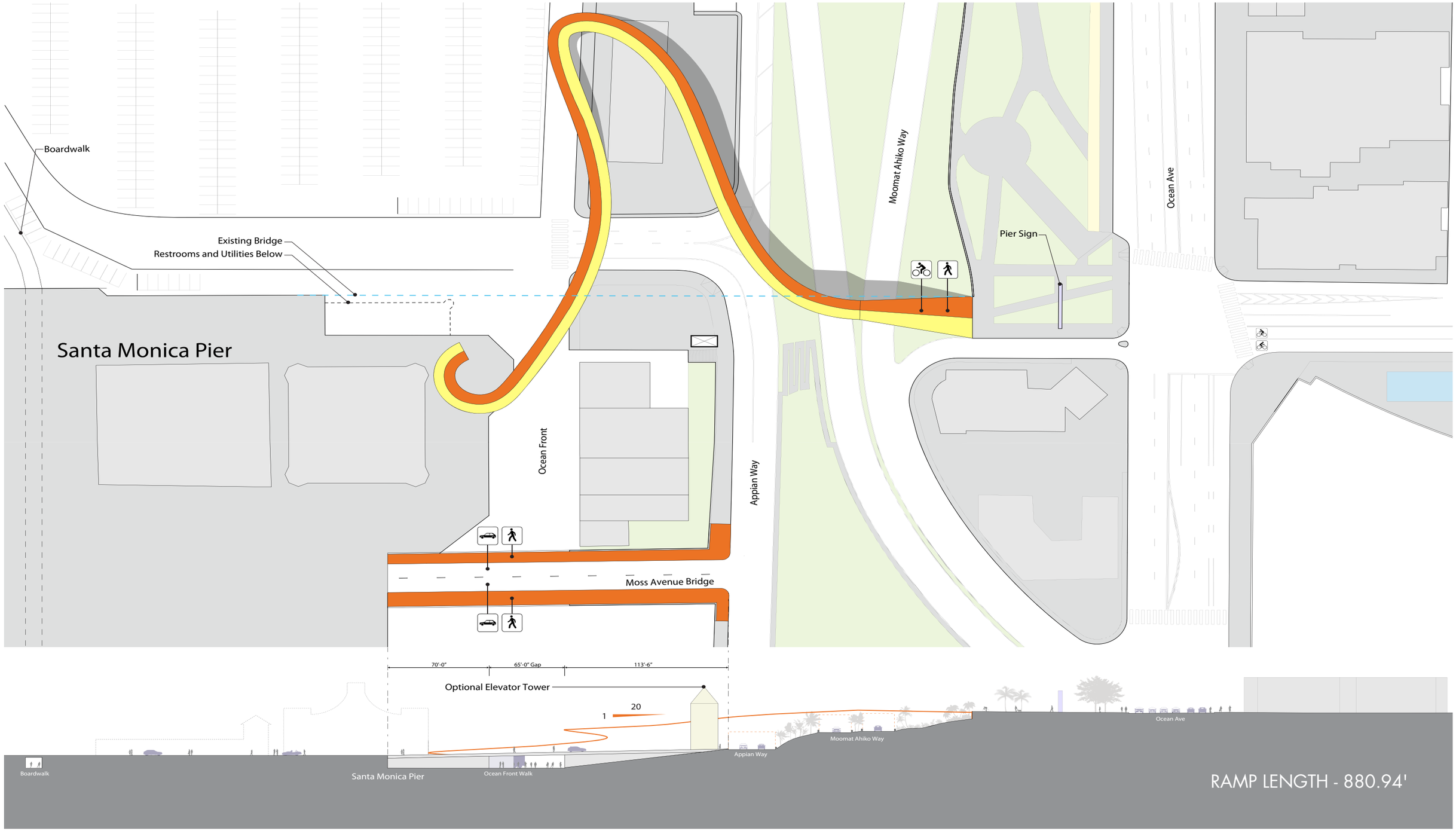


ALTERNATIVE 3 CONCEPT C2 | PLAN & ELEVATION

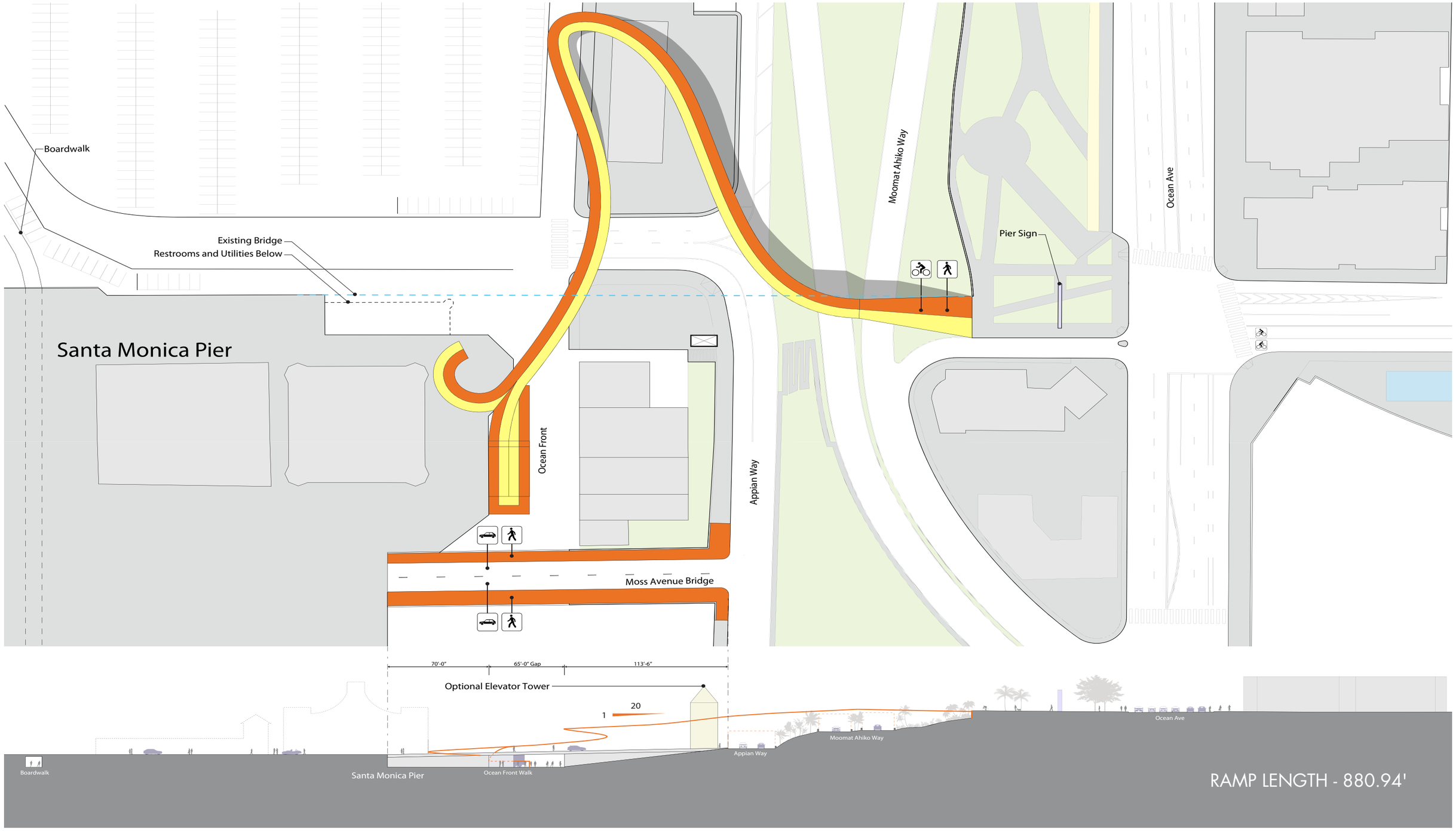




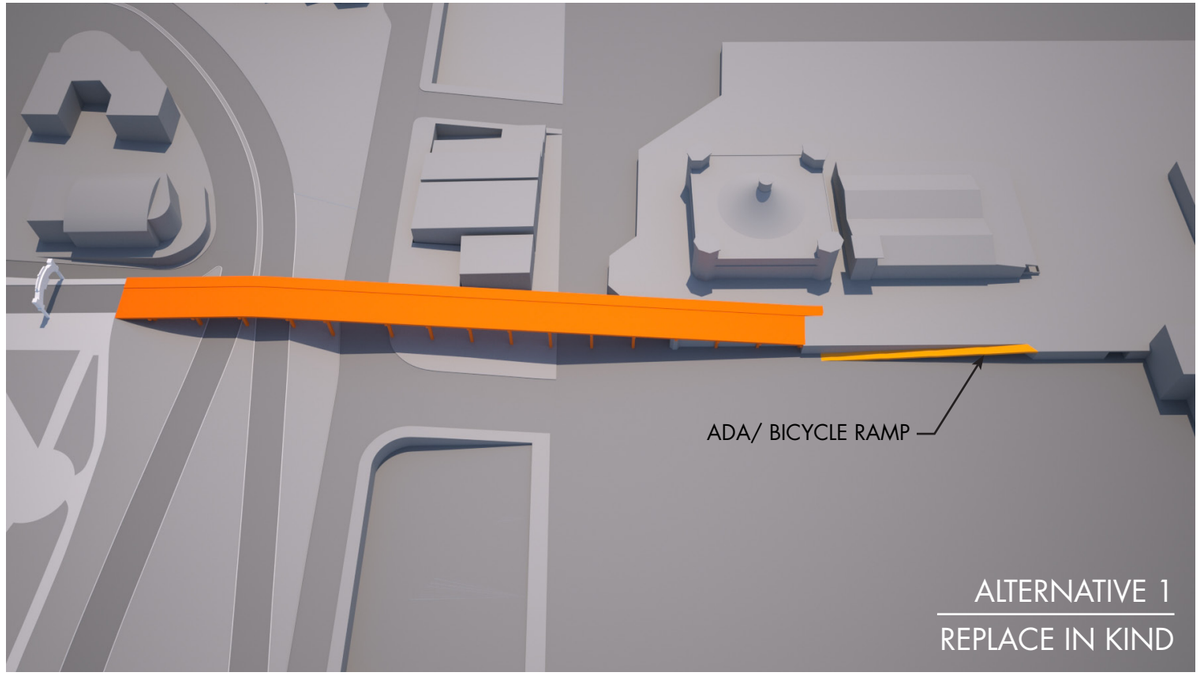
ALTERNATIVE 3 CONCEPT D | PLAN & ELEVATION

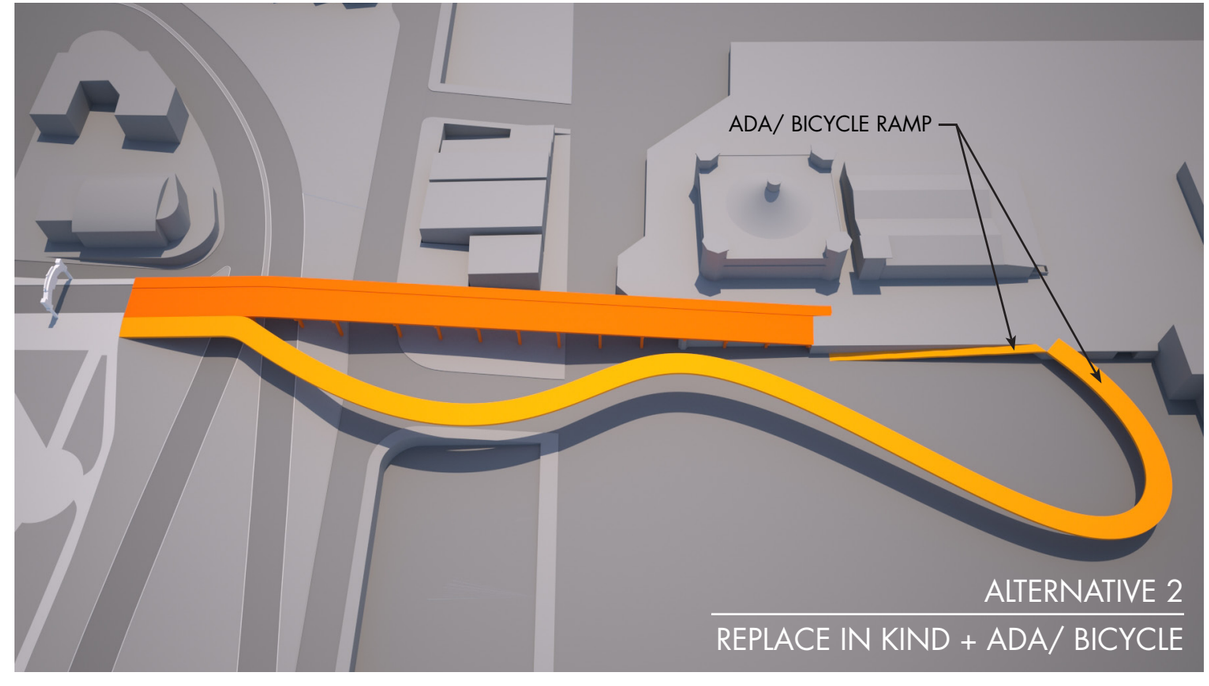


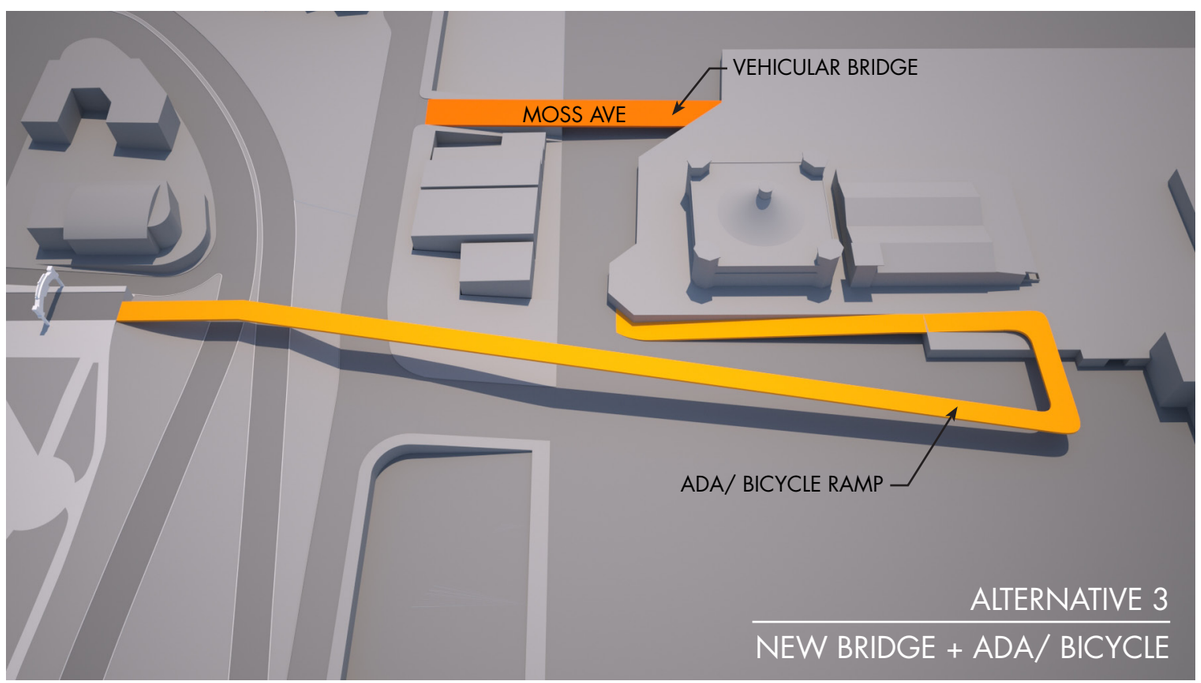
ALTERNATIVE 3 CONCEPT D2 | PLAN & ELEVATION

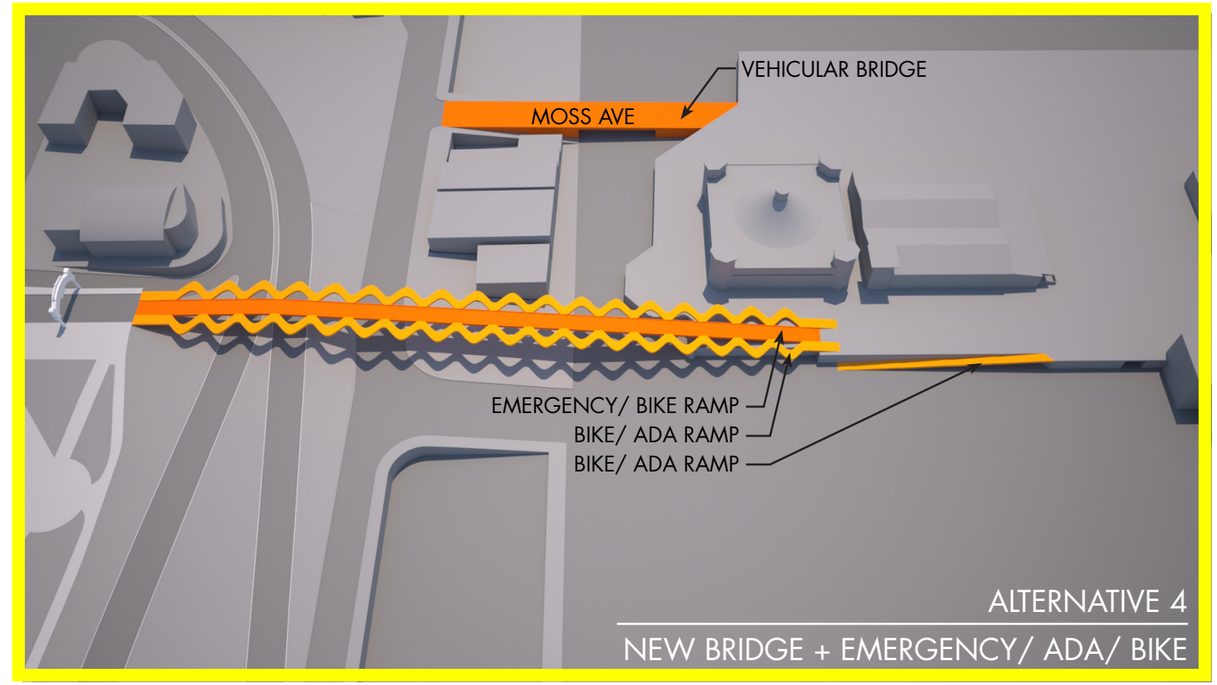


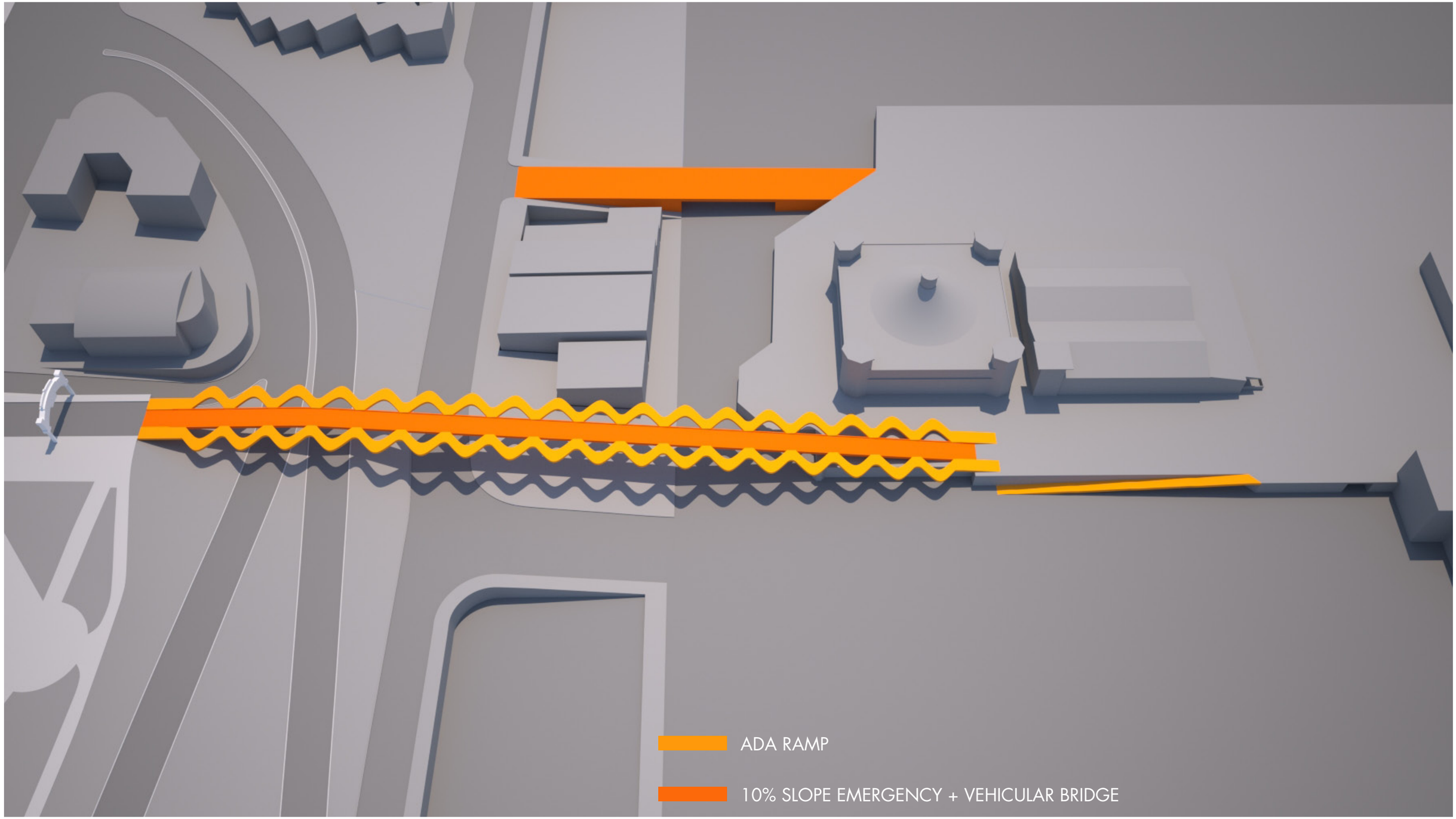
ALTERNATIVE SUMMARY

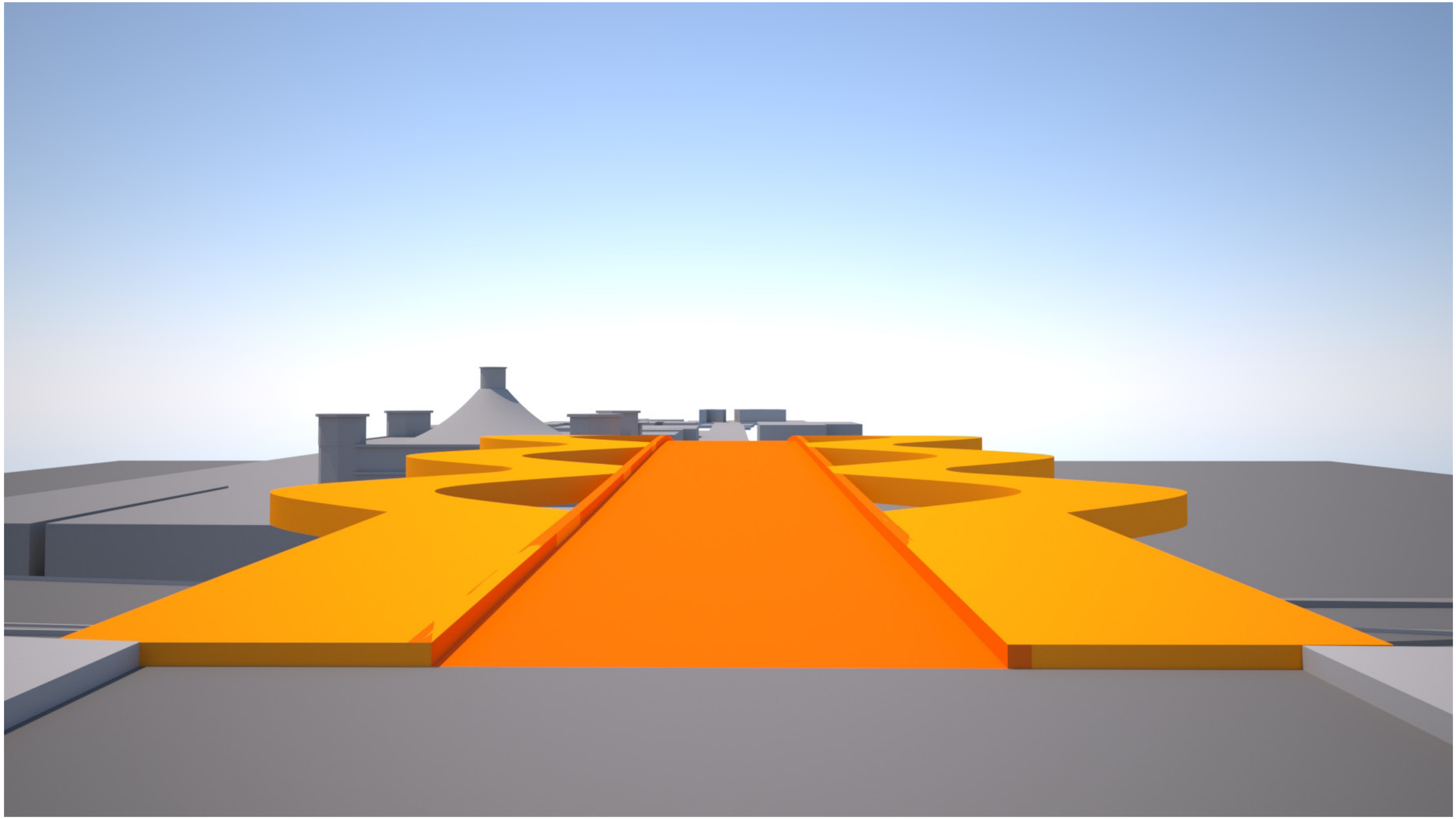


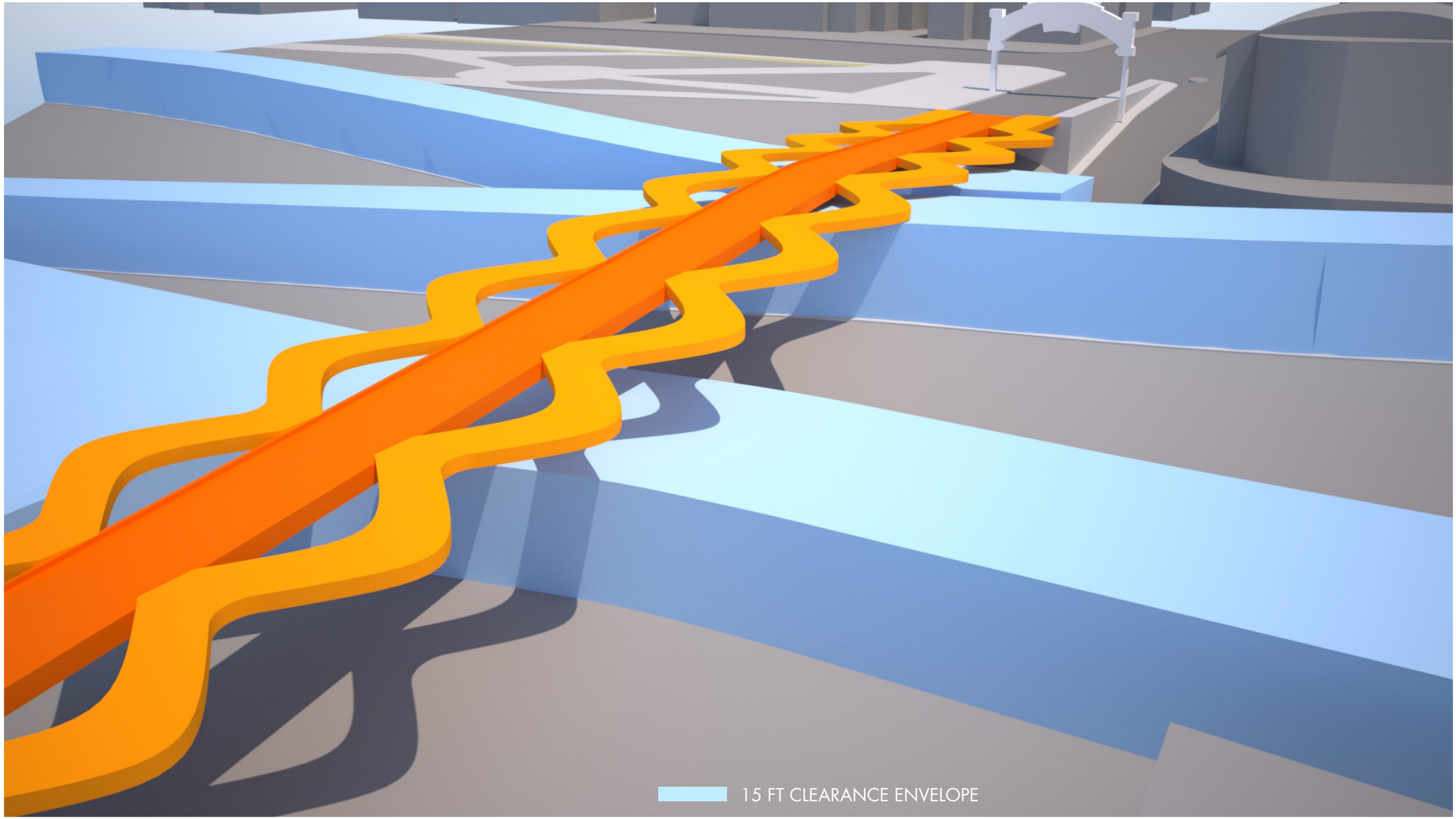


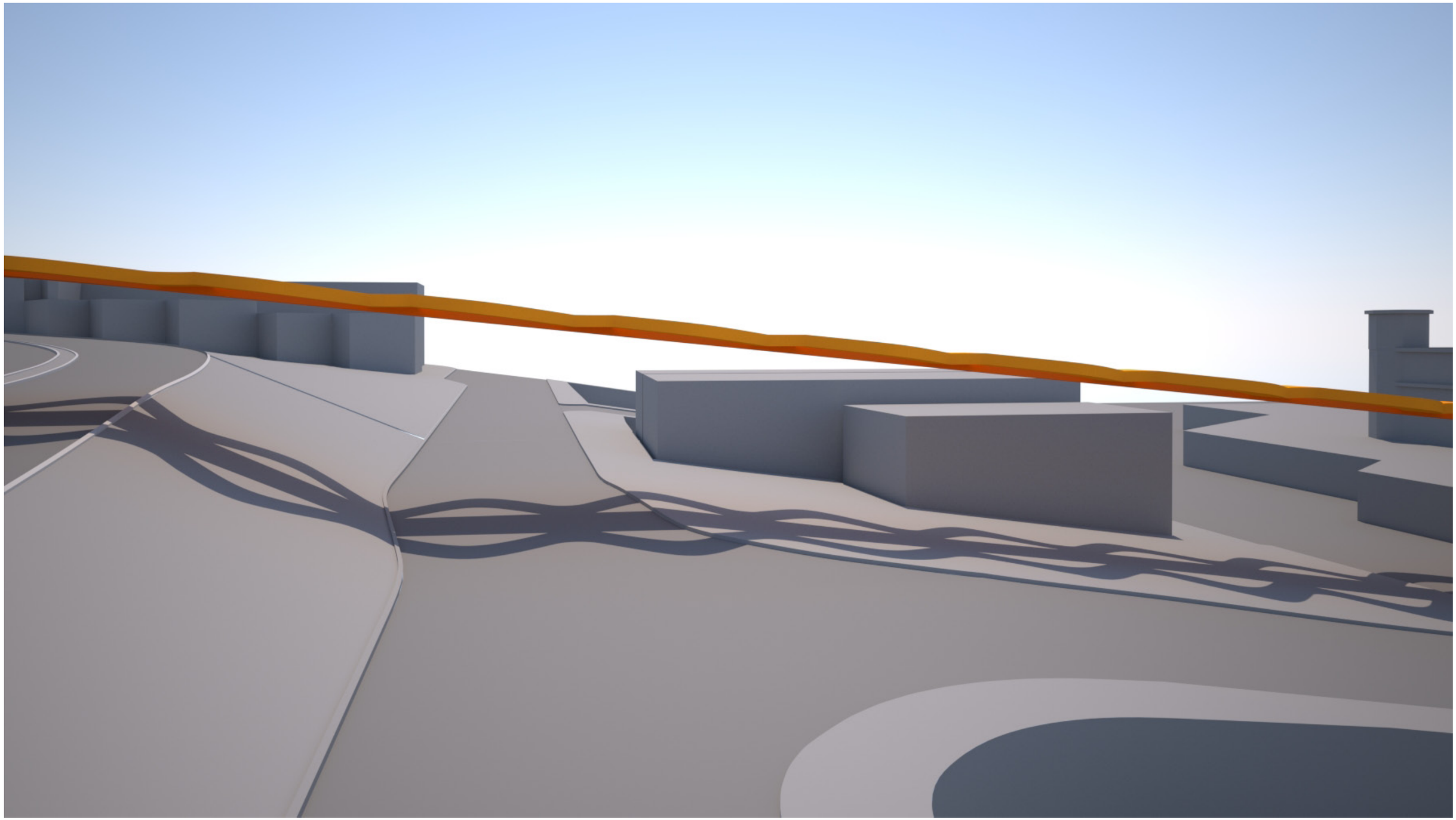


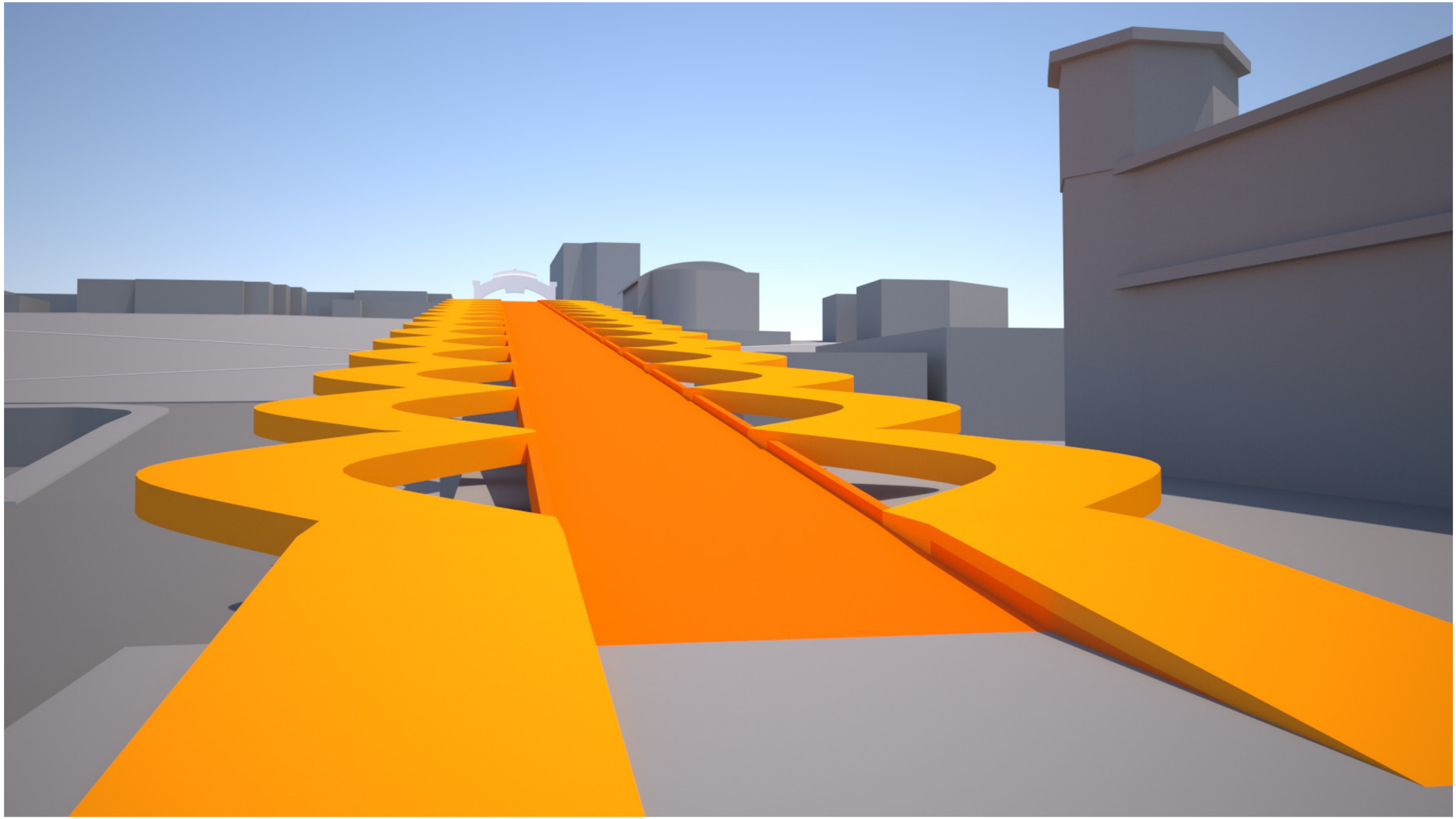



ADA RAMP
10% SLOPE EMERGENCY + VEHICULAR BRIDGE




15 FT CLEARANCE ENVELOPE





COUNTOURED WOOD BRIDGE CONCEPT, VIENNA

COUNTOURED WOOD BRIDGE CONCEPT, VIENNA

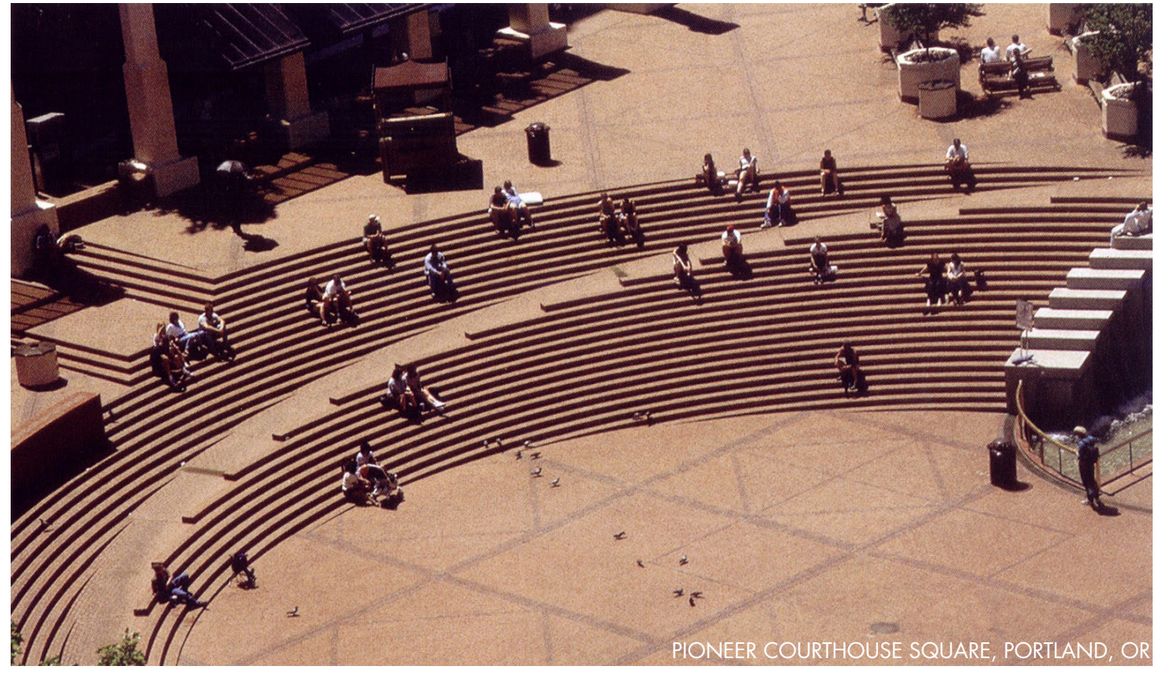
ONE MAIN STREET, BELLEVUE CONDOS

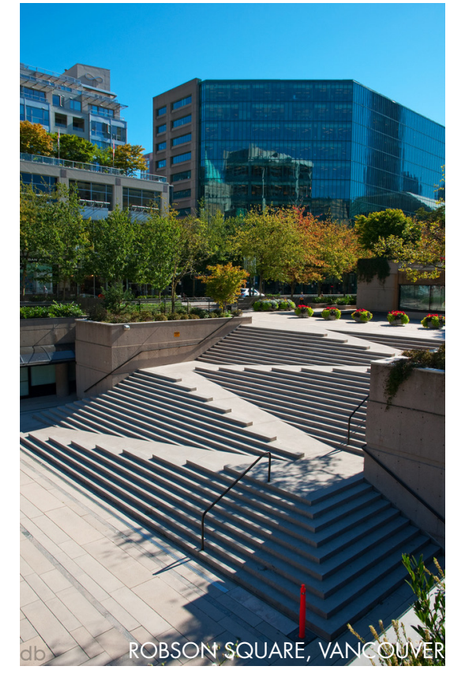
SIMCOE WAVEDECK, TORONTO

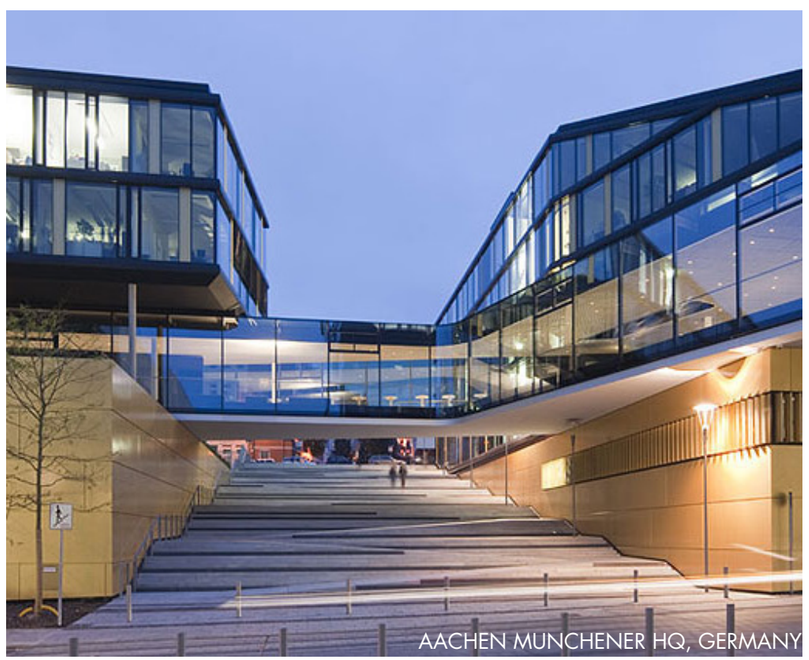
SIMCOE WAVEDECK, TORONTO

WILD REINDEER REFUGE, NORWAY

AACHEN MUNCHENER HQ, GERMANY


PIONEER COURTHOUSE SQUARE, PORTLAND, OR


ROBSON SQUARE, VANCOUVER


AACHEN MUNCHENER HQ, GERMANY

PIONEER COURTHOUSE SQUARE, PORTLAND, OR

ROBSON SQUARE, VANCOUVER

CASTLEFORD BRIDGE, ENGLAND

SASSNITZ FOOTBRIDGE, GERMANY

CASTLEFORD BRIDGE, ENGLAND

CAN GILI FOOTBRIDGE, SPAIN

KENT MESSENGER BRIDGE, ENGLAND

YORK MILLENIUM BRIDGE, ENGLAND

BORREGAS PEDESTRIAN BRIDGE, CALIFORNIA

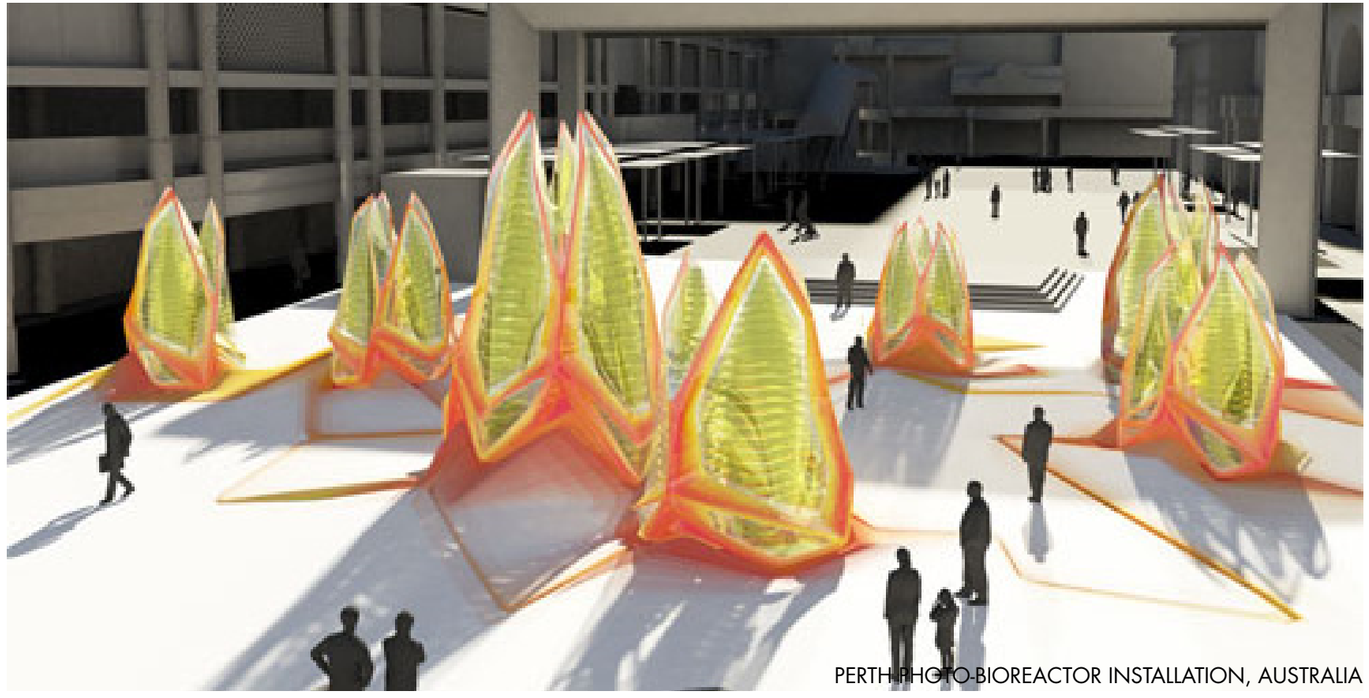
MUSEUM PARK FOOTBRIDGE, NETHERLANDS

YORK MILLENIUM BRIDGE, ENGLAND

ROYAL VICTORIA DOCK BRIDGE, ENGLAND

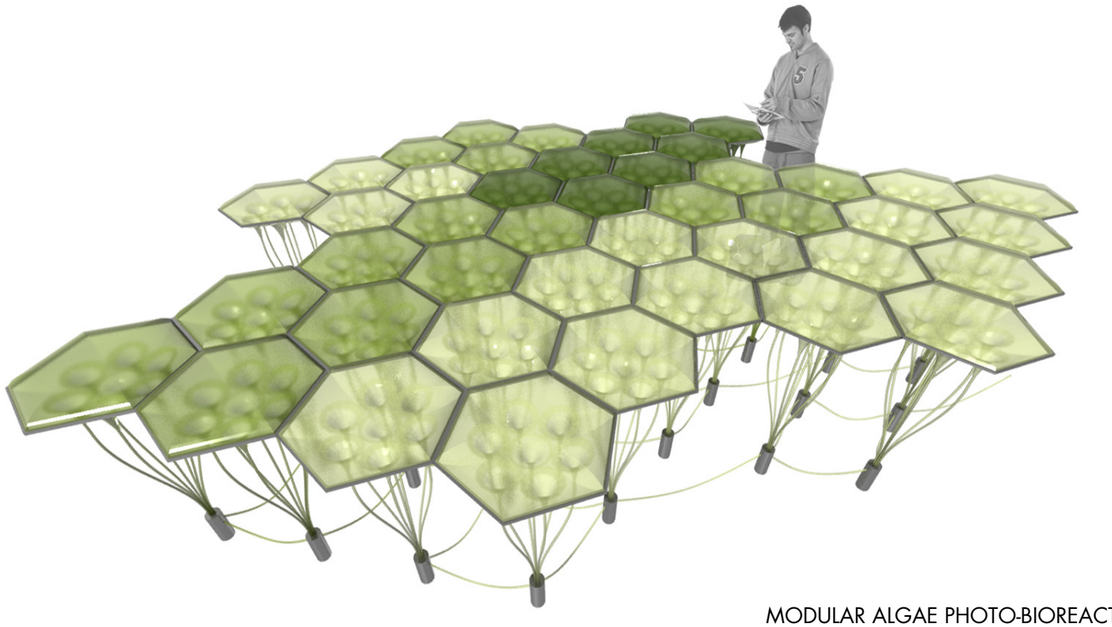
WIND TURBINE BRIDGE, ITALY

KURILPA BRIDGE, AUSTRALIA



PERTH PHOTO-BIOREACTOR INSTALLATION, AUSTRALIA

PAVEGEN FLOOR TILES, ENGLAND



MODULAR ALGAE PHOTO-BIOREACTOR

ALGAE BIOREACTOR TOWER

CELLULAR SOLAR TOWER, ITALY

ROOF TOP WIND FARM, OKLAHOMA

END OF PRESENTATION

PROCEEDING SLIDES ARE TO BE SHOWN IF DEEMED NECESSARY