Attachment C

OTHER ALTERNATIVES CONSIDERED

US 101 / I-280 MANAGED LANES PROJECT (PSR-PDS)

CONCEPTUAL ALTERNATIVES FOR FURTHER STUDY

ALTERNATIVE	DESCRIPTION	PROS	CONS	PID Alternative for further study?
1A	Maximum Footprint - widening to add ML in SM, planned SM improvements, operational improvements, existing infrastructure upgrades, route split on NB 101 at 280, shoulder conversion on 280, and several transit improvements	♦Managed lanes would increase person throughput, encourage carpooling and transit use, and improve travel time and reliability for HOV and transit users ♦ Existing general purpose lanes are perpetuated ♦ Would construct improvements to "near standard" and eliminate some nonstandard design features	♦Signficant R/W and local street impacts to accommodate freeway widening	**YES**
1B	Similar to Alternative 1A except with NB ML extended to north of Bayshore Blvd and connecting to elevated NB 101-280 ML direct connector structure from median 101 along right side of 280 viaduct to just north of 25th Street	♦ Similar to Alternative 1A ♦ Provide continuous ML facility between 101 and 280 ♦Elevated structure may provide additional travel time and reliability improvements for managed lanes users on NB 280	♦ Similar to Alternative 1A, with additional R/W and local street impacts to accommodate elevated NB 101/280 direct connector structure ♦ ML connector bents reduce available City R/W on portions of Bayshore Blvd. ♦ ML connector cannot merge with lower deck of 280 viaduct. Elevated structure would need to extend to connect in the median of 280 to the north of 25th Street ♦ ML connector ramp entrance geometry requires extensive widening of NB 101, similar to Alternative 1A ♦ Potential environmental justice concerns associated with R/W takes needed for elevated MN connector	**YES**
1C	Reversible Lanes (280) - elevated structure from north of Bayshore BLvd. to north of 25th Street. Moveable barrier to 5th/6th Streets split	♦ Similar benefits to Alternative 3A	♦Signficant R/W and local street impacts to accommodate elevated structure ♦ Structure bents reduce available City R/W on portions of Bayshore Blvd. ♦ Structure cannot merge with lower deck of 280 viaduct. Would need to extend to connect in the median of 280 to the north of 25th Street ♦ Potential environmental justice concerns associated with R/W takes needed for elevated ML connector ♦Long term maintenance costs of moveable barrier portion of facility	**YES**
2A	Minimum Footprint - conversion of lane or shoulder to ML, planned SM improvements, operational improvements, existing infrastructure upgrades, and several transit improvements	♦ Managed lanes would increase person throughput, encourage carpooling and transit use, and improve travel time and reliability for HOV and transit users ♦ Improvements are contained within existing R/W	♦ Detailed traffic studies required to confirm if lane conversion would provide acceptable traffic operations ♦ Lane conversion from GP to ML requires legislative approval ♦ New nonstandard design features would require a difficult approval process	**YES**
2B	Minimum Footprint - conversion of lane or shoulder to ML, and connecting to elevated NB 101-280 ML direct connector structure from median 101 along right side of 280 viaduct to just north of 25th Street, planned SM improvements, operational improvements, existing infrastructure upgrades, and several transit improvements	♦ Managed lanes would increase person throughput, encourage carpooling and transit use, and improve travel time and reliability for HOV and transit users ♦ Improvements are contained within existing R/W	♦ Detailed traffic studies required to confirm if lane conversion would provide acceptable traffic operations ♦ Lane conversion from GP to ML requires legislative approval ♦ New nonstandard design features would require a difficult approval process ♦ ML connector bents reduce available City R/W on portions of Bayshore Blvd. ♦ ML connector cannot merge with lower deck of 280 viaduct. Elevated structure would need to extend to connect in the median of 280 to the north of 25th Street ♦ ML connector ramp entrance geometry requires extensive widening of NB 101, similar to Alternative 1A ♦ Potential environmental justice concerns associated with R/W takes needed for elevated MN connector	**YES**

US 101 / I-280 MANAGED LANES PROJECT (PSR-PDS)

CONCEPTUAL ALTERNATIVES WITHDRAWN FROM FURTHER STUDY

ALTERNATIVE	DESCRIPTION	PROS	CONS	PID Alternative for further study?
1C	Similar to Alternative 1B except with elevated NB 101-280 ML direct connector structure from median 101 to widened lower deck along right side of 280 viaduct	♦ Similar to Alternative 1B	♦ Similar to Alternative 1B ♦ Widening lower deck of 280 viaduct would require significant retrofit of the existing structure and may not be constructible	NO
1D	Similar to Alternative 1B except with elevated NB 101-280 ML direct connector structure from NB 101 / WB 280 connector to left side of 280 viaduct	♦ Similar to Alternative 1B	♦ Similar to Alternative 1B ♦ Portions of ML connector limit design speed to 50 mph with further reduction in design speed due to limited stopping sight distance ♦ Would not provide a continuous managed lane facility	NO
1E	Similar to Alternative 1B except with elevated NB 101-280 ML direct connector structure from median 101 to left side of 280 viaduct	♦ Similar to Alternative 1B	♦ Similar to Alternative 1B ♦ Portions of ML connector limit design speed to 50 mph with further reduction in design speed due to limited stopping sight distance	NO
3A	Reversible Lanes (101)	♦ Benefits traffic flow in commute direction ♦ Some benefit to bus routes	♦ Inconsistent route continuity at interface with proposed San Mateo County US 101 Express Lanes facility ♦ US 101 peak period volumes similar in each direction ♦ Adverse impact to traffic in opposite direction where a lane is taken away (moveable barrier scenario) ♦ Moveable barrier not feasible at some 'pinch point' locations	NO
4	Right shoulder bus lane	♦Increase person throughput, encourage transit use, and improve travel time and reliability for transit users ♦ Existing general purpose lanes are perpetuated	♦ No benefit for other ML users ♦ Legislation required to operate bus of shoulder facility ♦ Special training of bus drivers required ♦ Shoulder improvements required to support bus traffic ♦ Continuous facility is not feasible at several pinch point locations	NO
5	Extend 101 ML facility to Central Freeway	♦ Improved access to downtown area ♦ Serve users traveling through San Francisco ♦ Encourage carpooling and transit use	♦ Close proximity of 101/280 interchange ramp structures prevent freeway widening to accommodate ML ♦ Lane conversion expected to degrade GP lanes at existing bottleneck ♦ Does not provide a logical termini for a 101-280 ML facility since it would be located within MTC/BAIFA jurisdiction. This project does not preclude this segment for study as a separate project.	NO
6	Replace double-deck viaduct with elevated structure	♦ Would construct this portion of freeway to "near standard" ♦ Opportunity to extend northbound 280 Managed Lane	♦ Would not provide a continuous managed lane facility ♦ Extensive ROW acquisition and relocation assistance ♦ Reconstruction of 101/280 interchange ♦ Long term freeway closures during construction	NO

US 101 / I-280 MANAGED LANES PROJECT (PSR-PDS)

CONCEPTUAL ALTERNATIVES WITHDRAWN FROM FURTHER STUDY

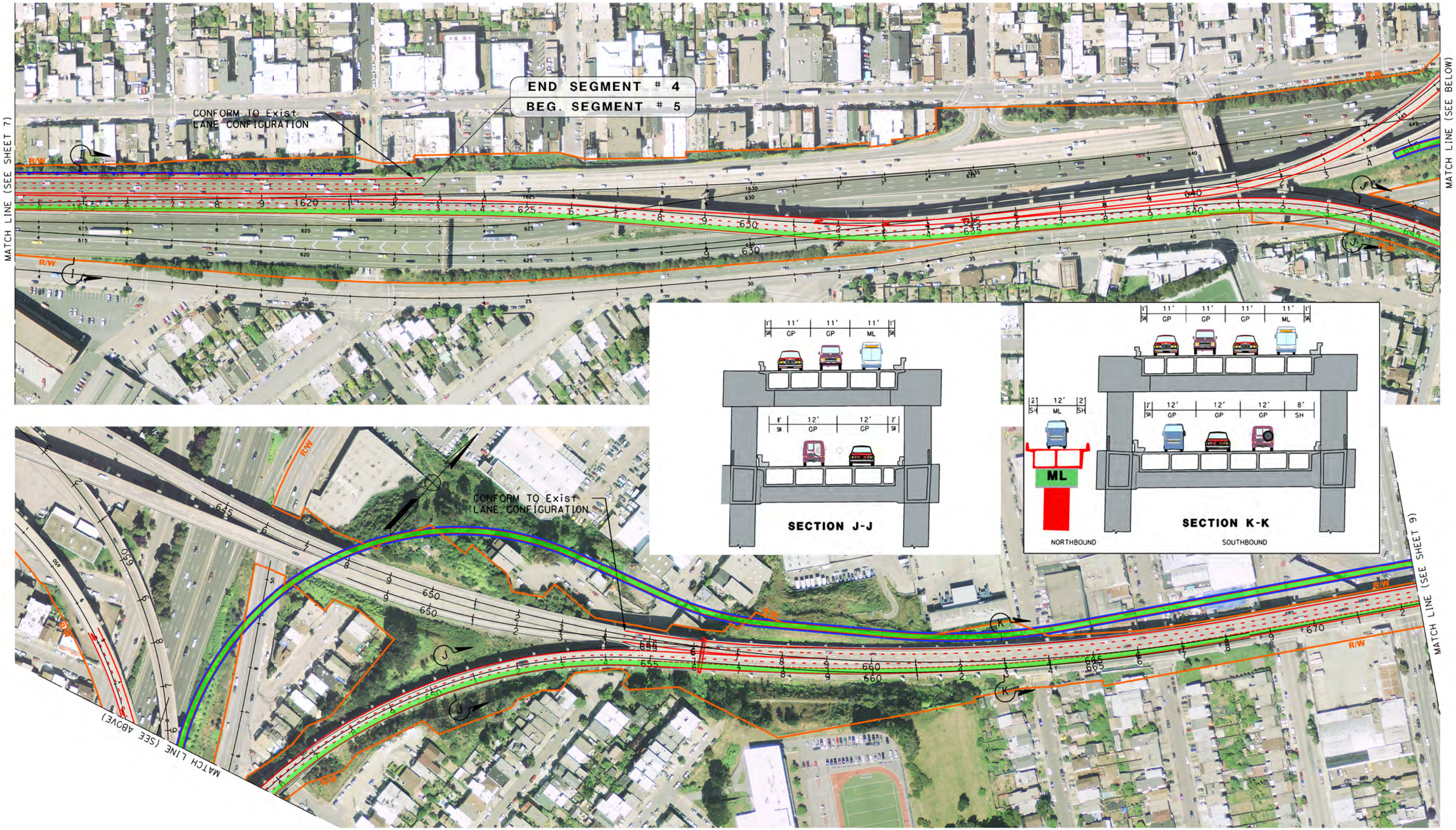
ALTERNATIVE	DESCRIPTION	PROS	CONS	PID Alternative for further study?
7	Operational Improvements Only	♦ Optimize efficiency of existing facility ♦	♦ Does not provide a managed lane facility ♦ Detailed traffic studies required to confirm if operational improvements would satisfy project Purpose and Need	NO**
8A	Bus Route Improvements (future MUNI Route CPX) - NB 101/Harney Way on-ramp HOV Bypass Lane	♦ Encourage carpooling and transit use ♦ Opportunity to provide traffic signal preemption systems for transit vehicles on freeway on-ramps	♦ Future configuration of Harney Way interchange is unknown at this point ♦	NO**
8B	Bus Route Improvements - new direct connector ramps between 280 and Silver Avenue area for Muni 8/8AX Bus Route	♦ Encourage transit use ♦ Improve travel time reliability for buses currently using 101 north of 280 interchange to access the Transbay Terminal	♦ High capital cost, environmental impacts, and right of way impacts associated with direct connector ramps between I-280 and Silver Ave area ♦ Constructability concerns connecting bus ramps to 280 double deck viaduct ♦ Wayfinding concerns due to close proximity to freeway-to freeway connector ramps	NO

** Incorporate into new Alternatives 1C*
*** Incorporate into Alternatives 1 and 2*
Items highlighted in red are considered primary factors to withdraw an alternative from further consideration

WMH

SCALE: 1"=200'

US-101 AND I-280 MANAGED LANES
ALTERNATIVE 1D - MAXIMUM
Sheet 1 of 3



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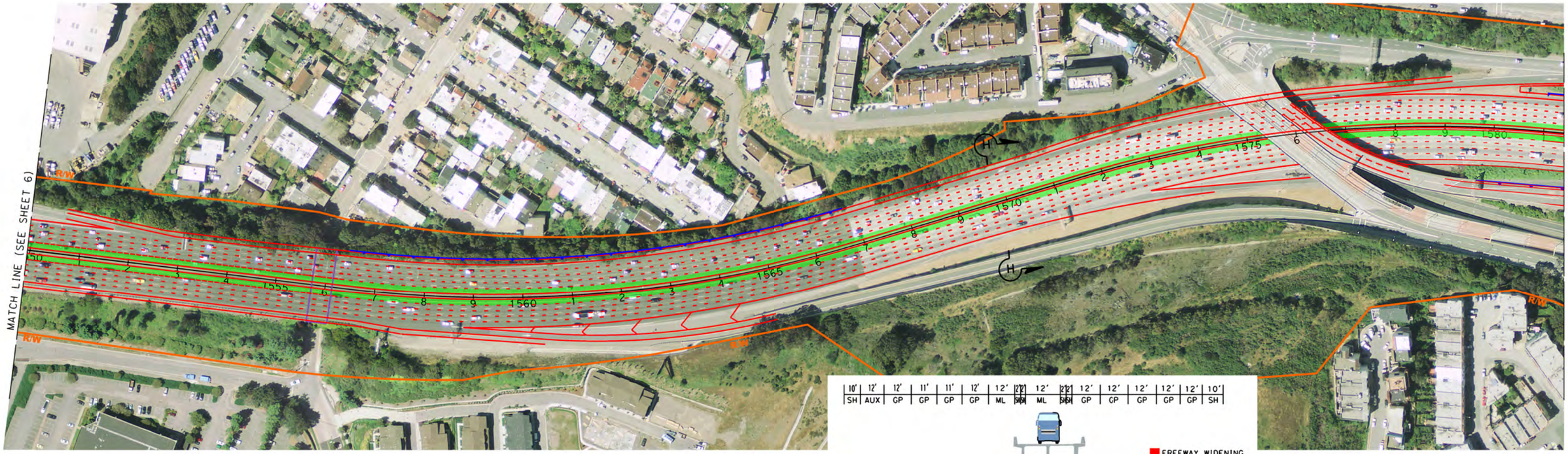
SCALE: 1"=200'

US-101 AND I-280 MANAGED LANES
ALTERNATIVE 1D - MAXIMUM
Sheet 2 of 3

WMH

SCALE: 1"=200'

US-101 AND I-280 MANAGED LANES
ALTERNATIVE 1D - MAXIMUM
Sheet 3 of 3



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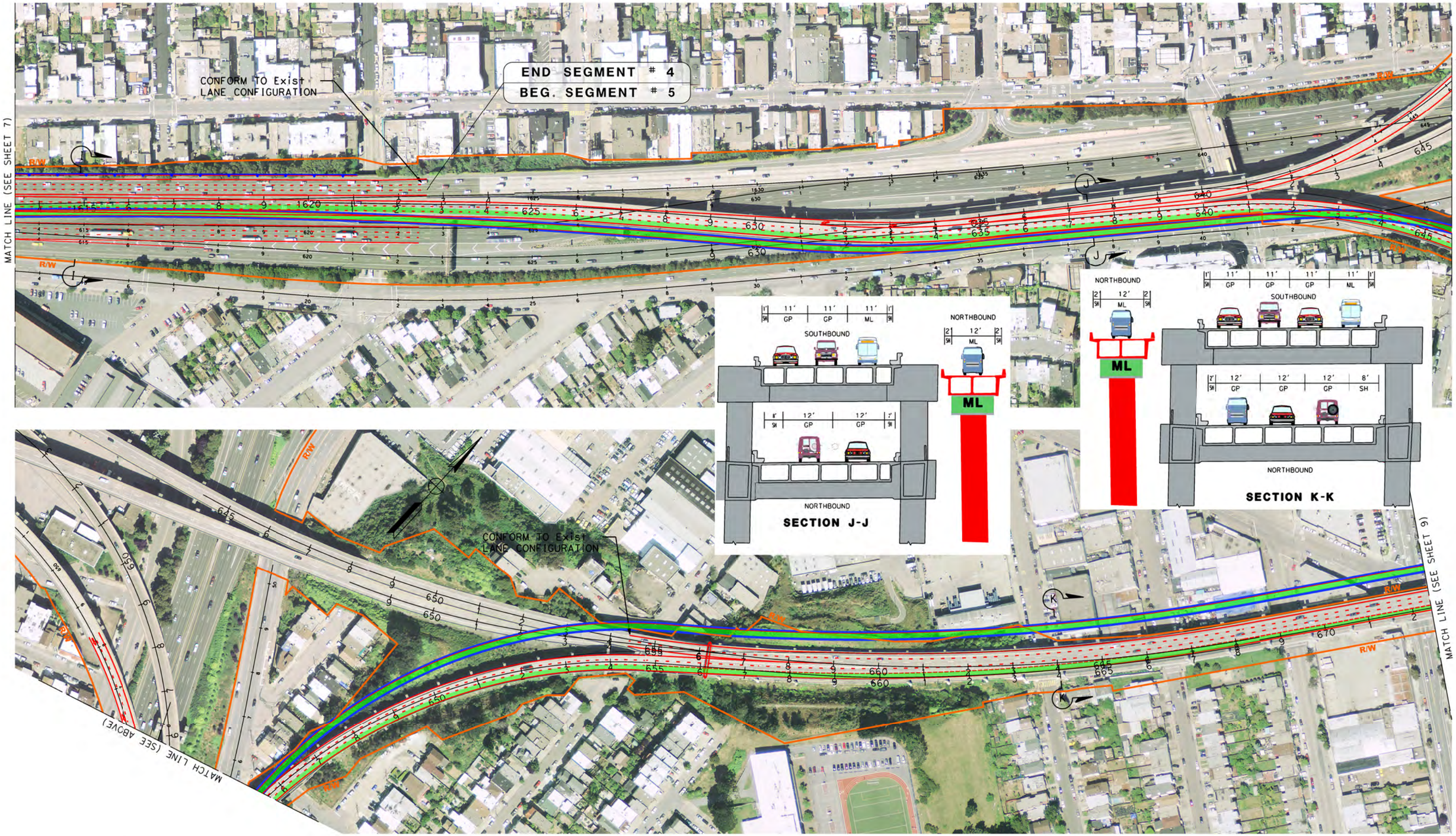
SCALE: 1"=200'

US-101 AND I-280 MANAGED LANES
ALTERNATIVE 1E - MAXIMUM
Sheet 1 of 3



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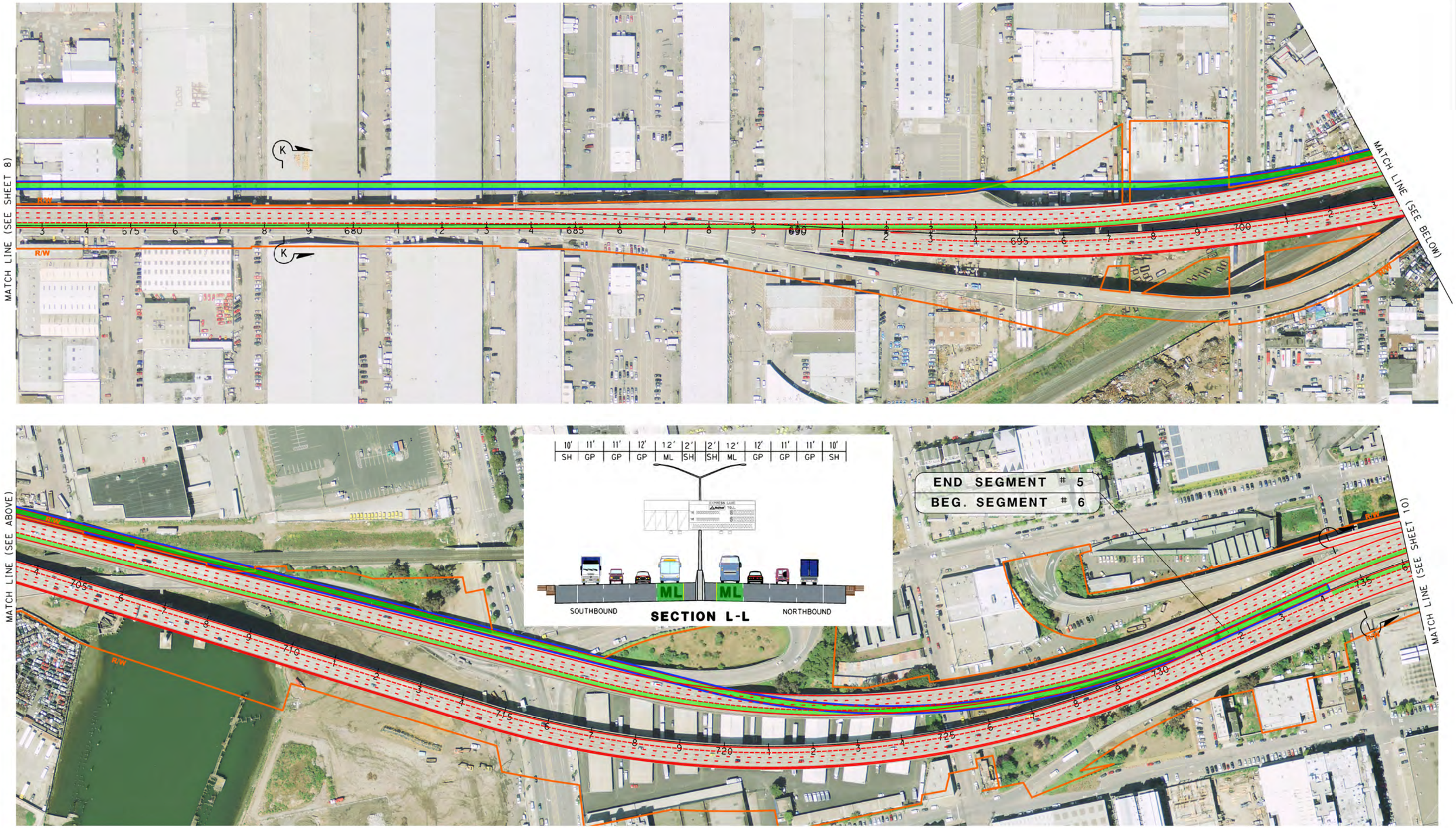
SCALE: 1"=200'

US-101 AND I-280 MANAGED LANES
ALTERNATIVE 1E - MAXIMUM
Sheet 2 of 3



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US-101 AND I-280 MANAGED LANES
ALTERNATIVE 1E - MAXIMUM
Sheet 3 of 3