CASCADIA HIGH SPEED RAIL COMPANY'S FOUR PART BRIDGE PLAN ADDENDUM

As an Alternative Program for the Interstate Bridge Replacement Program

- Alternative A: THE NEW MULTI-MODAL BRIDGE AND VEHICLE INTERCHANGES
- Alternative B: THE HAYDEN ISLAND AUXILIARY BRIDGE
- Alternative C: I-5 BRIDGE SEISMIC UPGRADE AND POSSIBLE ADDITIONAL TRAFFIC LANES
- Alternative D: NEW CENTER LIFT FOR EXISTING BNSF FREIGHT RAIL BRIDGE

Alternative A: THE NEW MULTI-MODAL BRIDGE AND VEHICLE INTERCHANGES

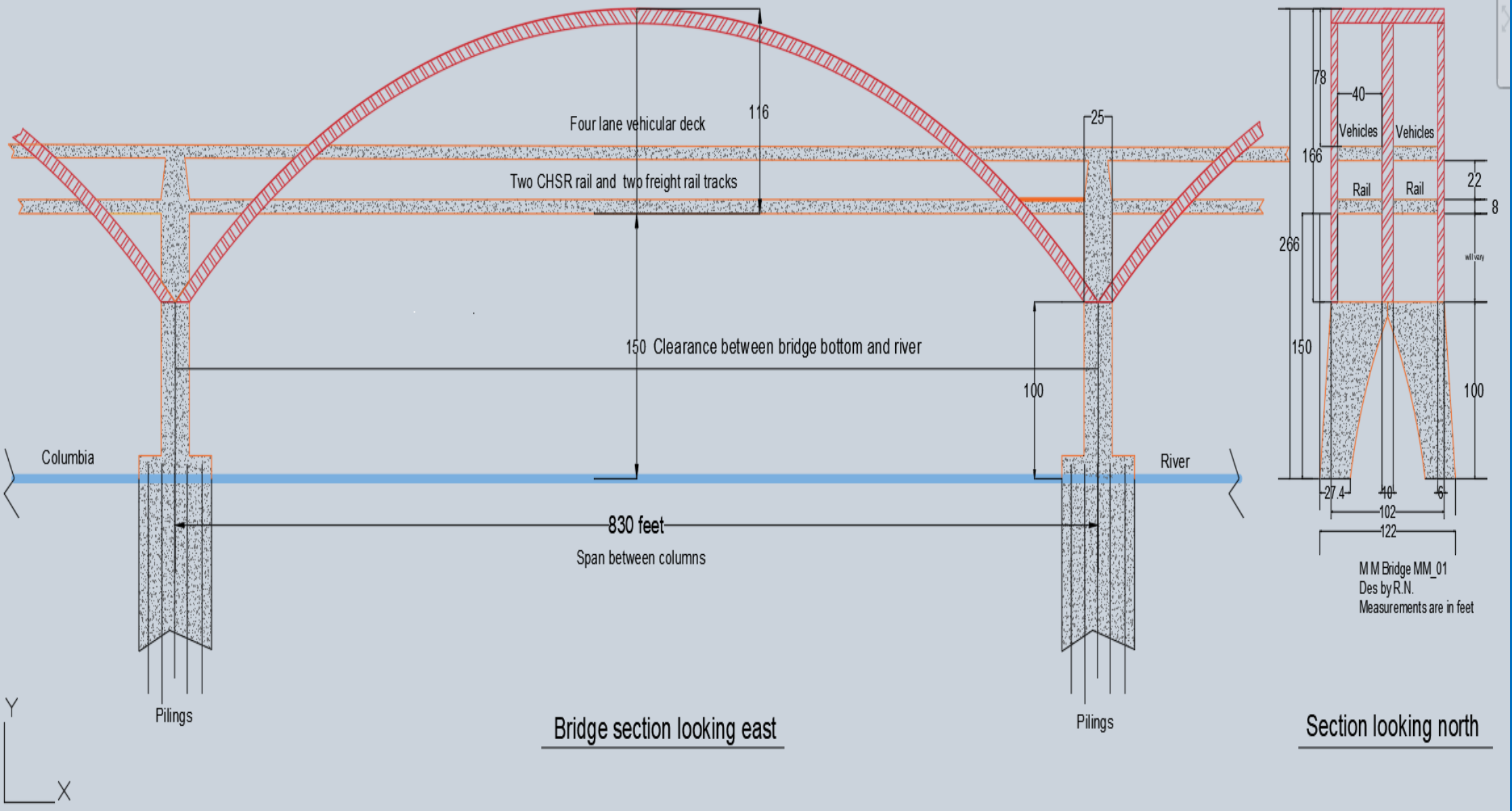
- The new Multi-Modal Bridge will support a new Cascadia High Speed Rail corridor between Portland Rose Quarter Transportation Hub and Vancouver WA. The M-M Bridge will also support four new traffic lanes between Portland's Columbia Blvd. and NW 78th St/I-5 interchange in Vancouver WA. The third corridor will create two new tracks for BNSF and UP Freight Railroad Companies.

- In the future a new Cascadia Commuter Express (C-CE) corridor can connect Bridgeport, in Tigard, to Vancouver that will be adjacent to Hwy 217, under Forest Park, over the Willamette River, through the BNSF Railroad cut, over the M-M Bridge, through West Vancouver, to the NW 78th St./ I-5 interchange.

- The goal for this new Multi-Modal Bridge and new transportation corridors is to divert 30% of the traffic off of I-5 and I-405.

- The proposed Bridgeport to Vancouver C-CE and traffic corridors will reduce traffic congestion by taking traffic off of Hwy 26, Vista Ridge Tunnels and I-405.

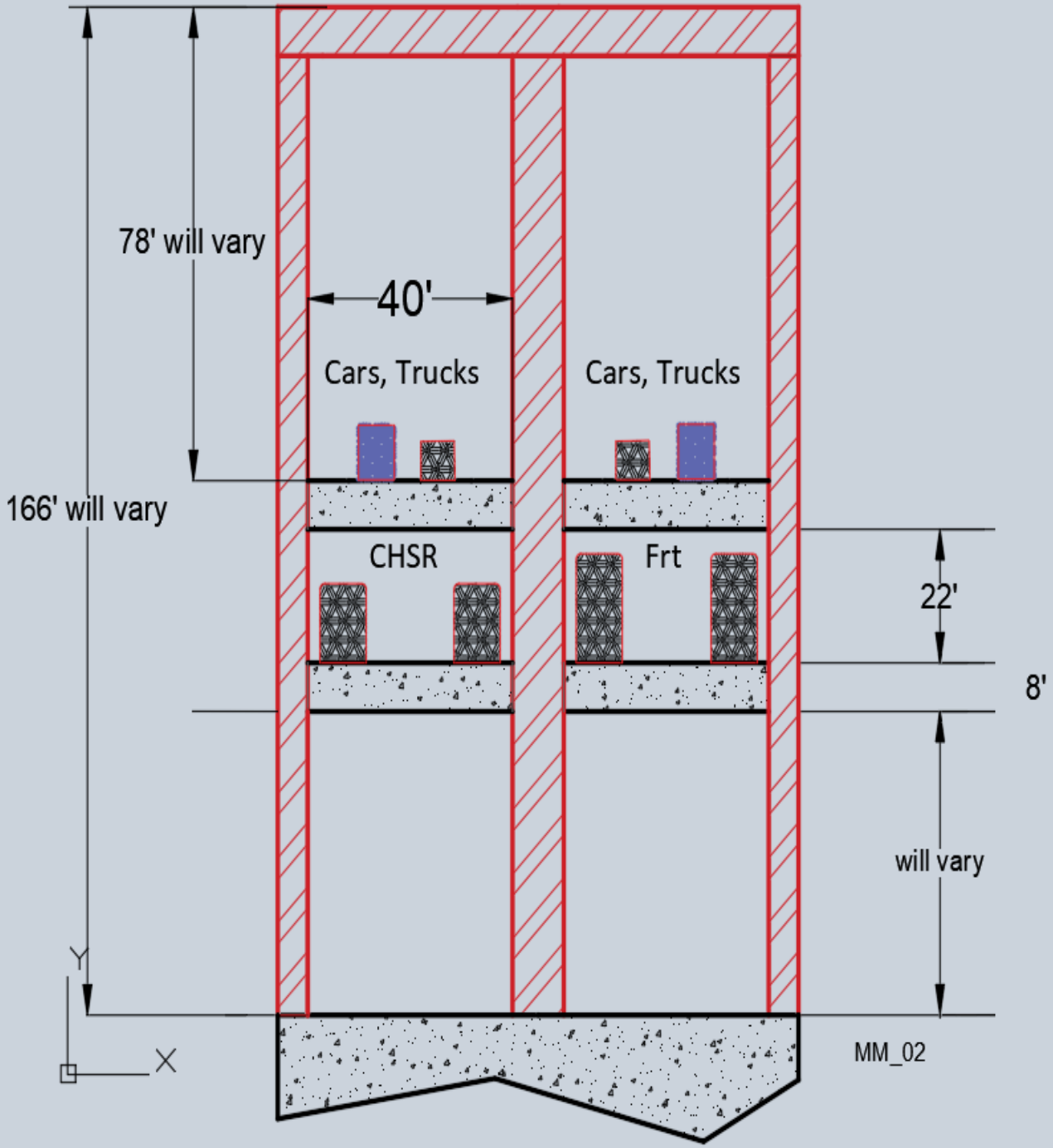
- This regional plan will help solve major congestion and pollution problems with increased population in Washington, Multnomah and Clark County areas.



Arched Multi-Modal Bridge

There are four large arches between Portland and Vancouver, three are above the river and one is on the Vancouver side. There are two piers in the Columbia River.

The M-M bridge will not interfere with airport traffic.

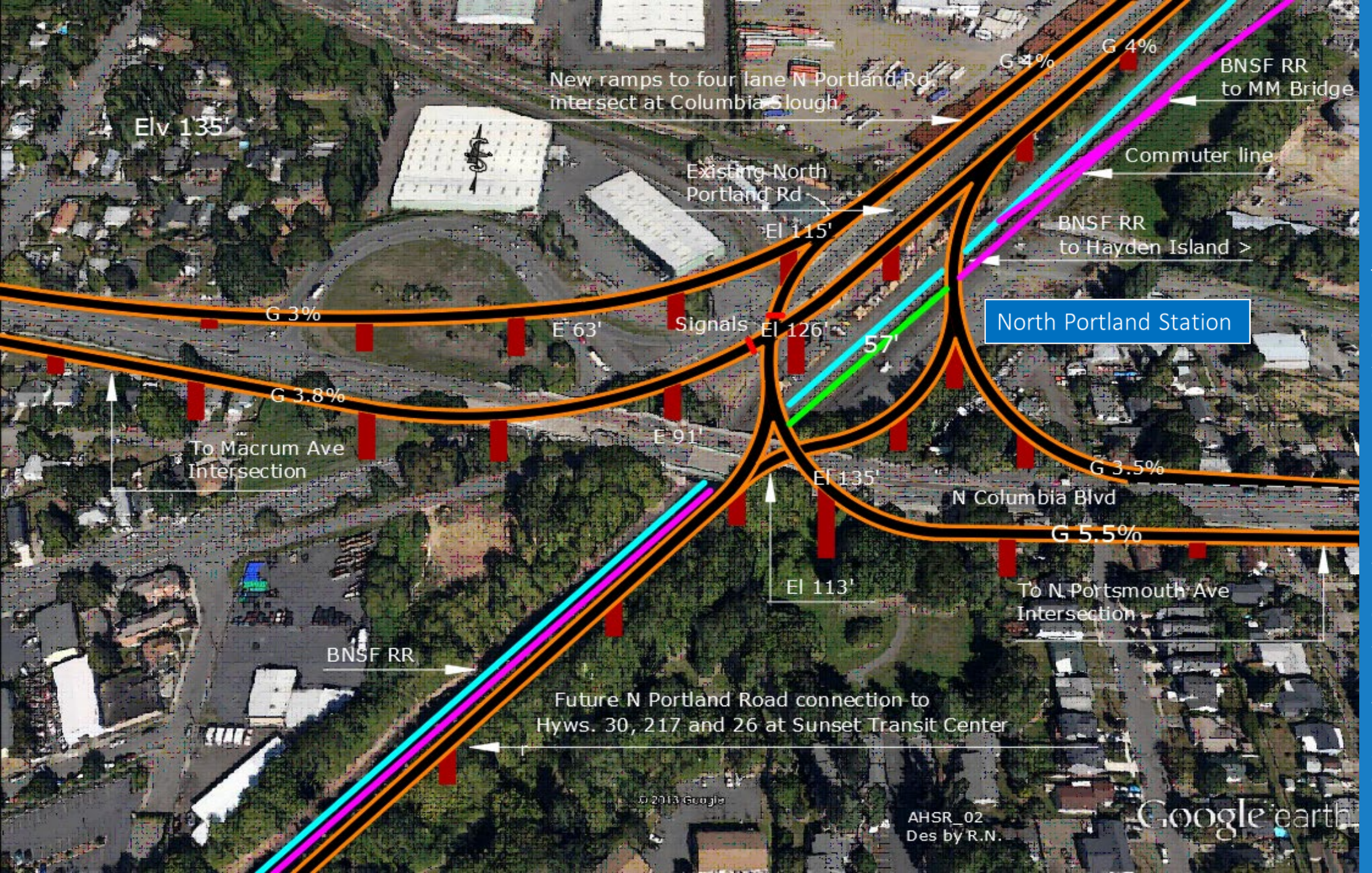


M-M Bridge Section View

Note, the elevations will vary due to the crowning of the M-M bridge.

This depiction section is above the Columbia River with the automotive traffic on the top deck.

The CHSR and freight trains have two tracks each. The automotive lanes have two lanes north bound, and two lanes south bound.



N Columbia Blvd Crossing and Interchanges

There is a possibility for a commuter station on the east side of the BNSF rail location.

New roadway interchanges showing possible future commuter rail service between MAX Sunset TC, Hwys. 217/26 and Battle Ground.

N Marine Dr Interchange with M-M Bridge

CHSR and BNSF/UPRR freight tracks on flyovers.

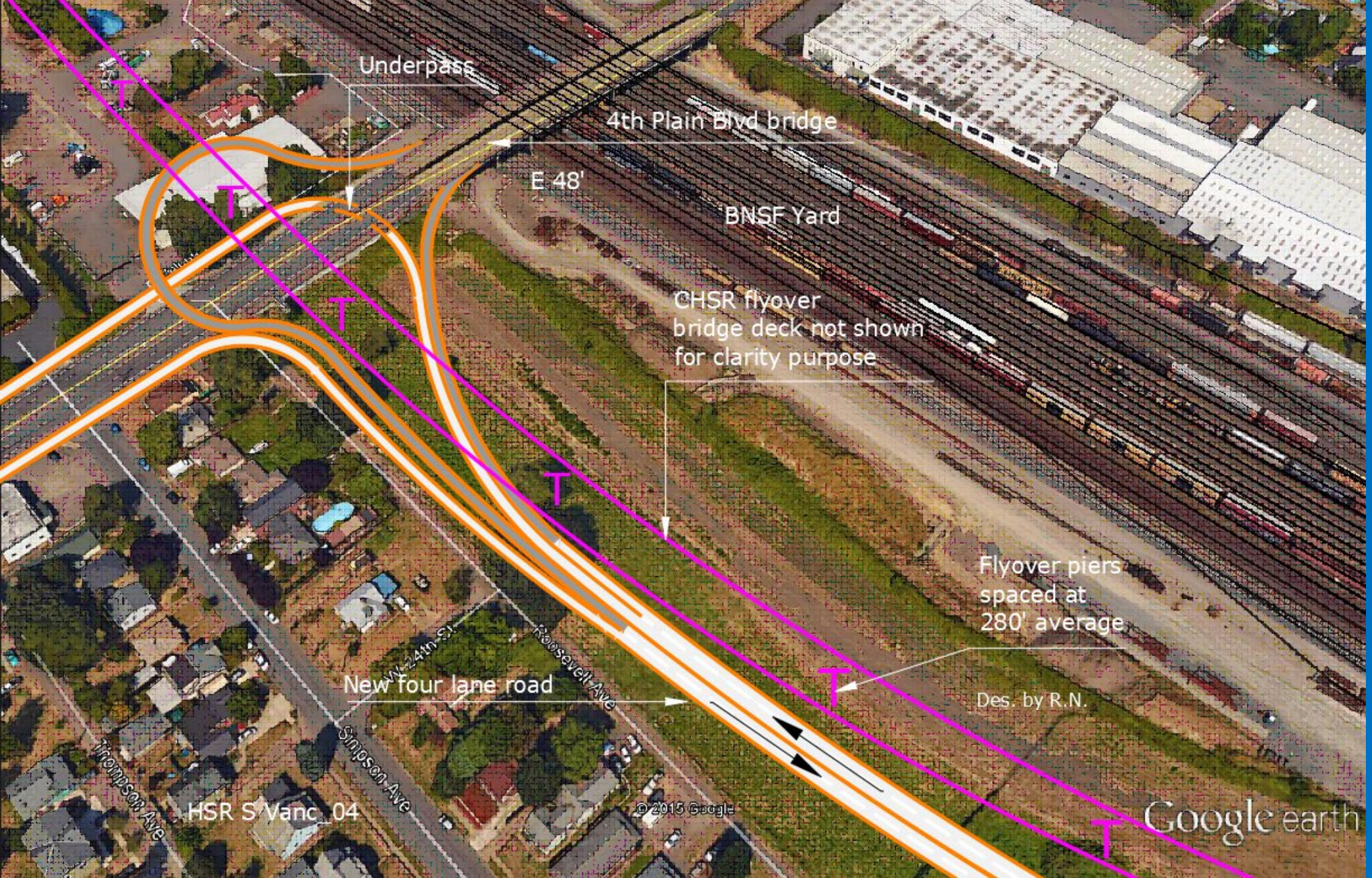
Proposed roadway intersections to and from the new multi-modal bridge.

N Shuttle Rd will intersect to N Marine Dr ± 0.4 miles to the west for good ramp grades.

Multi-Modal Bridge Crossing

The multi-modal bridge between North Portland and W Vancouver.

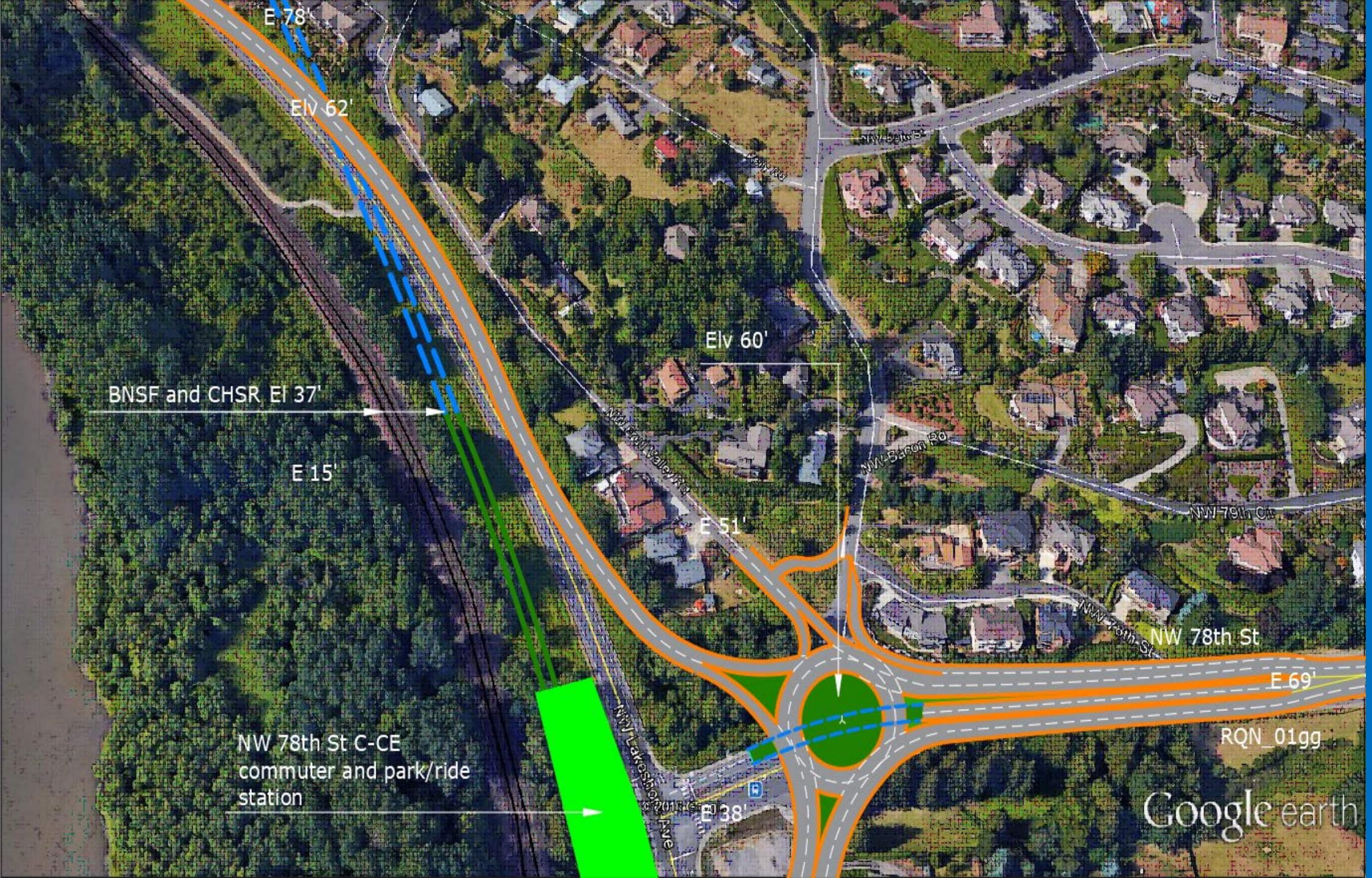
The automotive traffic south of Hayden Island is on the lower deck. On Hayden Island, the automotive lanes will swerve to the east and west to go to the upper deck.



Fourth Plain Blvd Interchange with New Expressway

The CHSR tracks are above the automotive interchanges. There is full access for Fourth Plain Blvd, Fruit Valley Rd, Hwy 501 and the Multi-Modal Bridge for vehicles.

The four traffic lanes north of Fourth Plain Blvd. is yet to be planned.



NW 78th St and N Lakeshore Ave Commuter Express Station

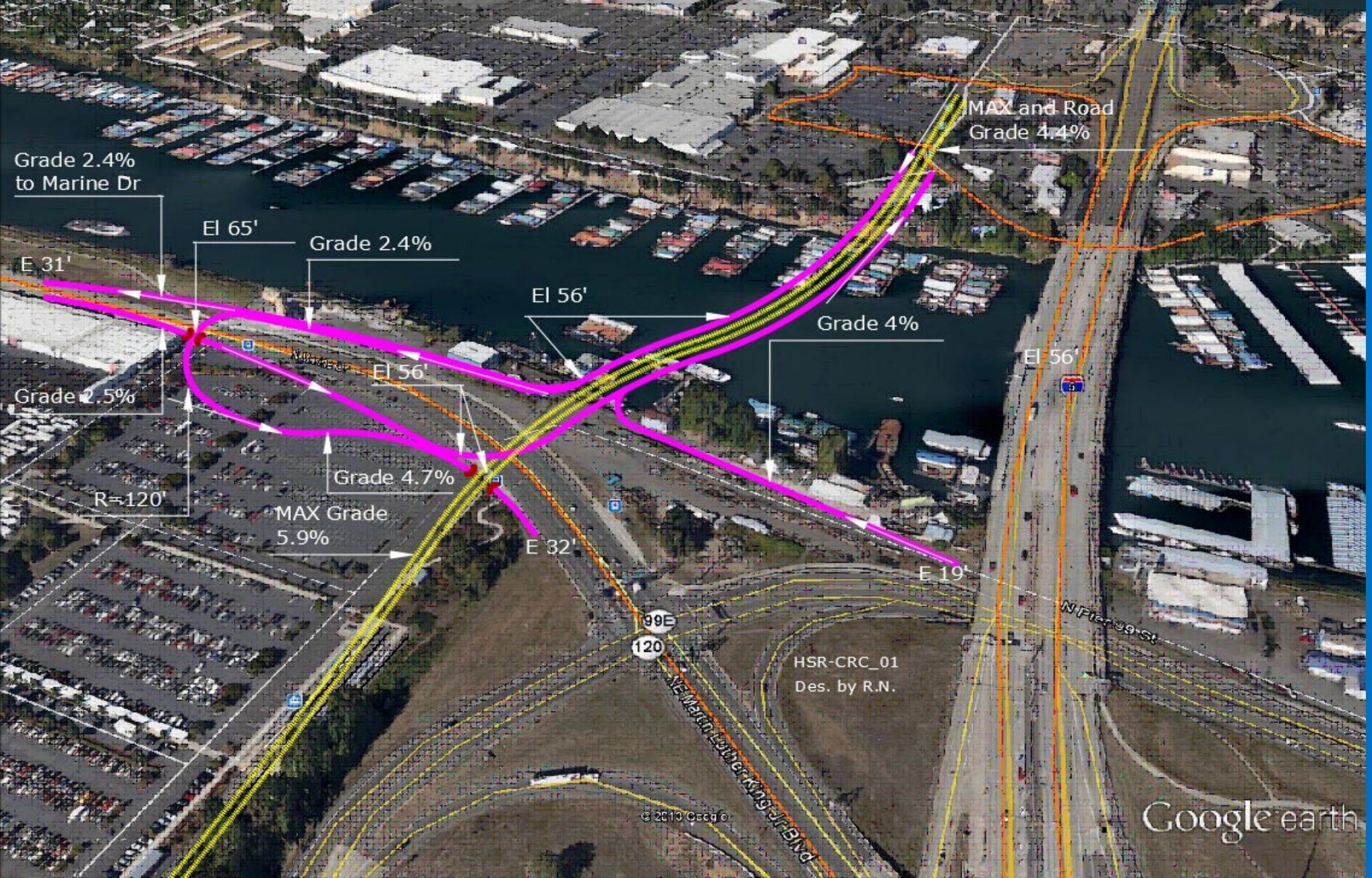
Access to CHSR Station from NW 78th St and travels under the proposed roundabout.

Alternative B: The HAYDEN ISLAND AUXILIARY BRIDGE

- The Auxiliary Bridge will provide access to Hayden Island via N Marine Drive, I-5, N Vancouver Way and Martin Luther King Jr. Boulevard.

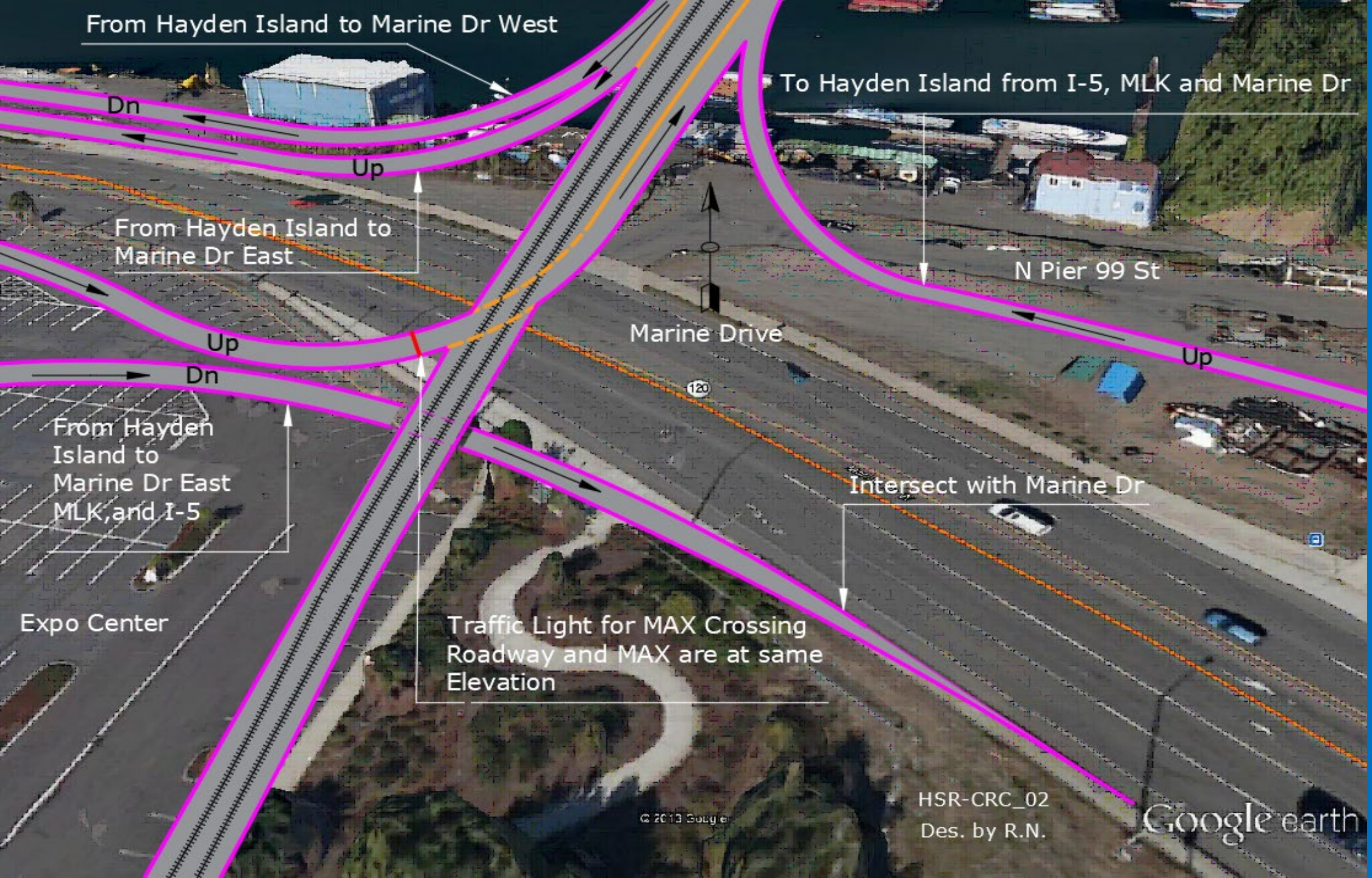
- The Auxiliary Bridge will also extend the MAX Yellow Line to Hayden Island.

- This Auxiliary Bridge will reduce the severe I-5 bottleneck between the existing Expo Center and Hayden Island on and off ramps.



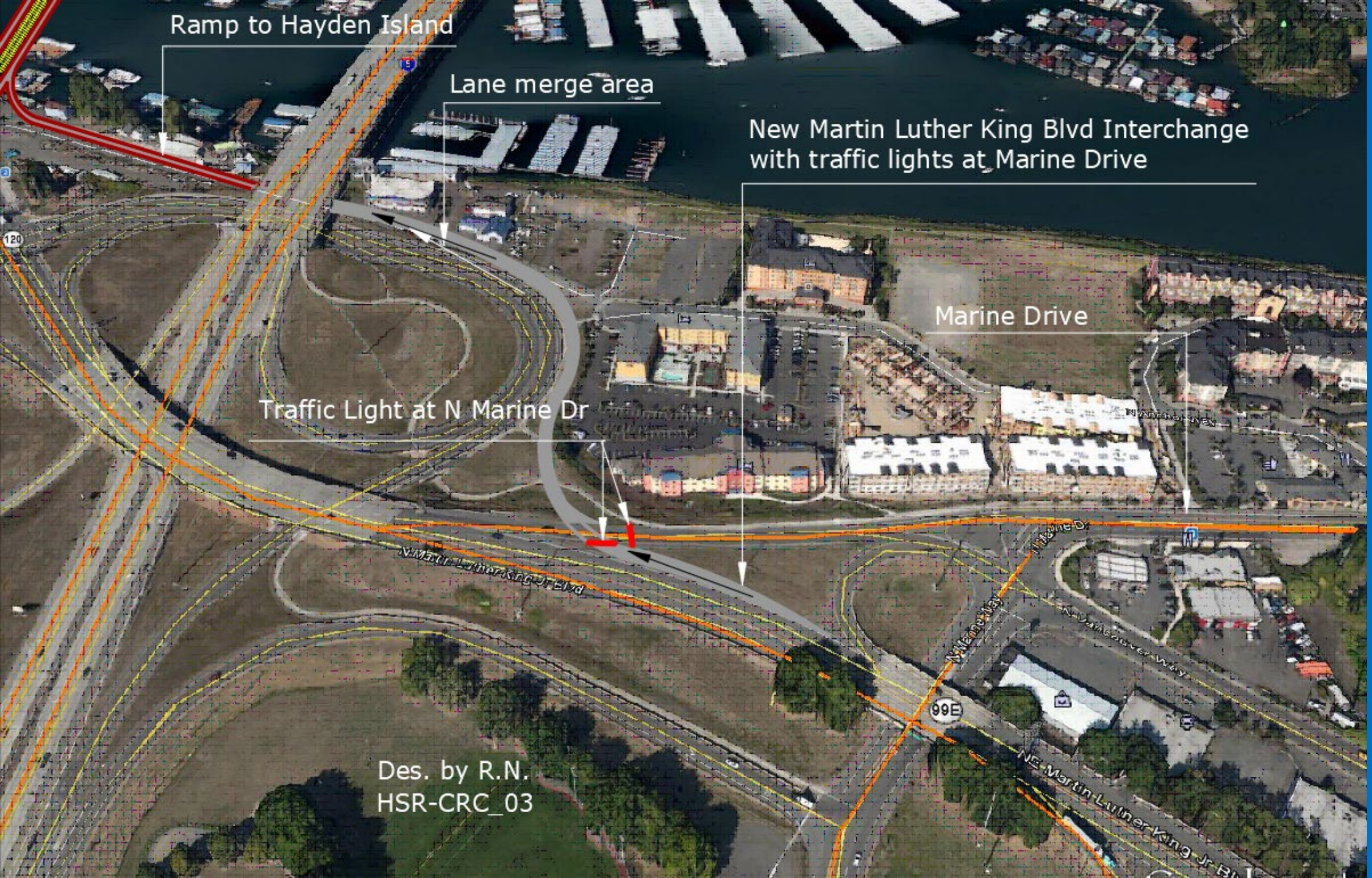
Hayden Island Auxiliary Bridge and I-5 Hwy

Interchanges with N Marine Drive, MAX and new flyovers. The auxiliary bridge will reduce congestion on the I-5 bridge and connects with the North Center Ave on Hayden Island.



Hayden Island Auxiliary Bridge Flyover

Interchange shows the MAX Yellow Line located in the center of the bridge and above Marine Drive.



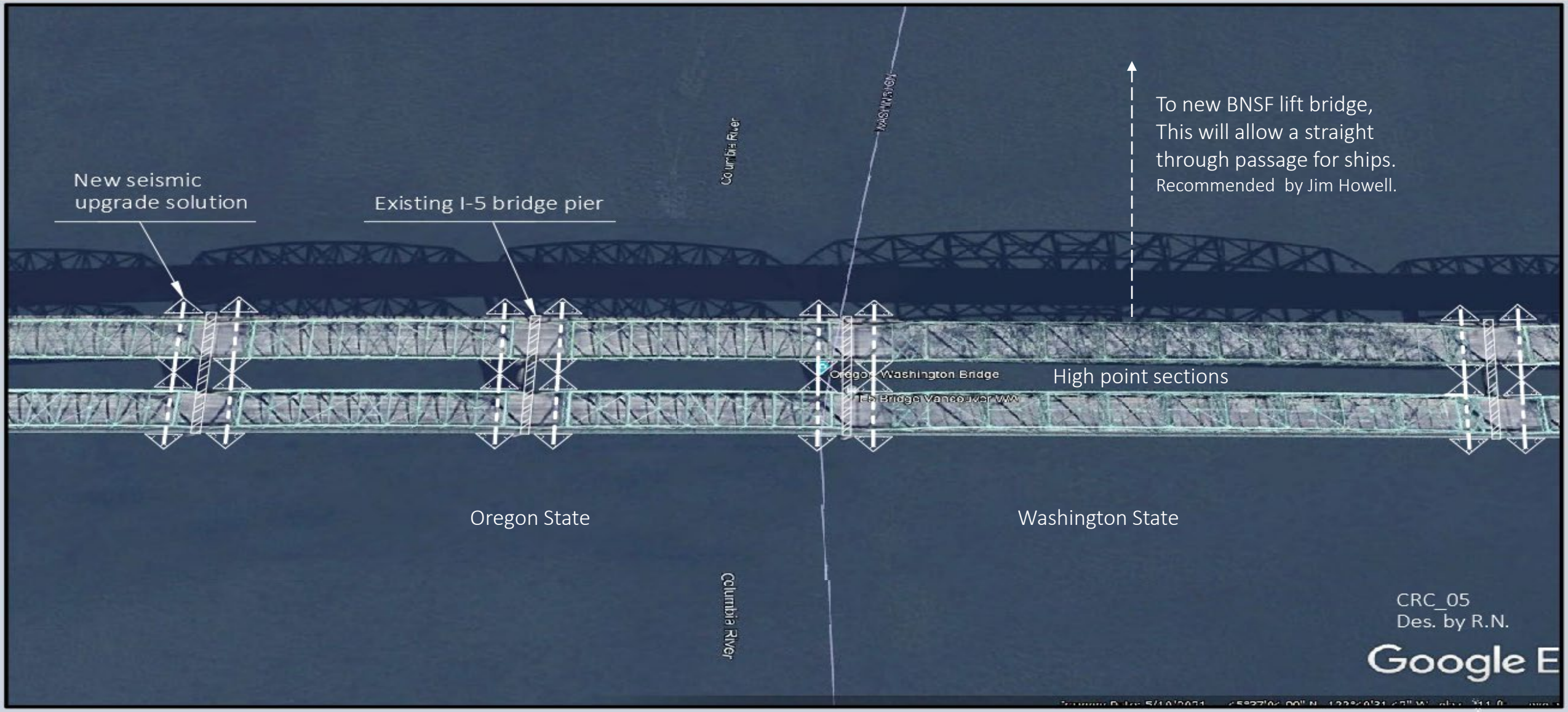
Martin Luther King Jr. Blvd and I-5 Hwy

Interchanges at I-5, N Marine Drive, NE Martin Luther King and N Vancouver Way allows speedy and direct access to Hayden Island via the auxiliary bridge reduces traffic on the I-5 Bridge.

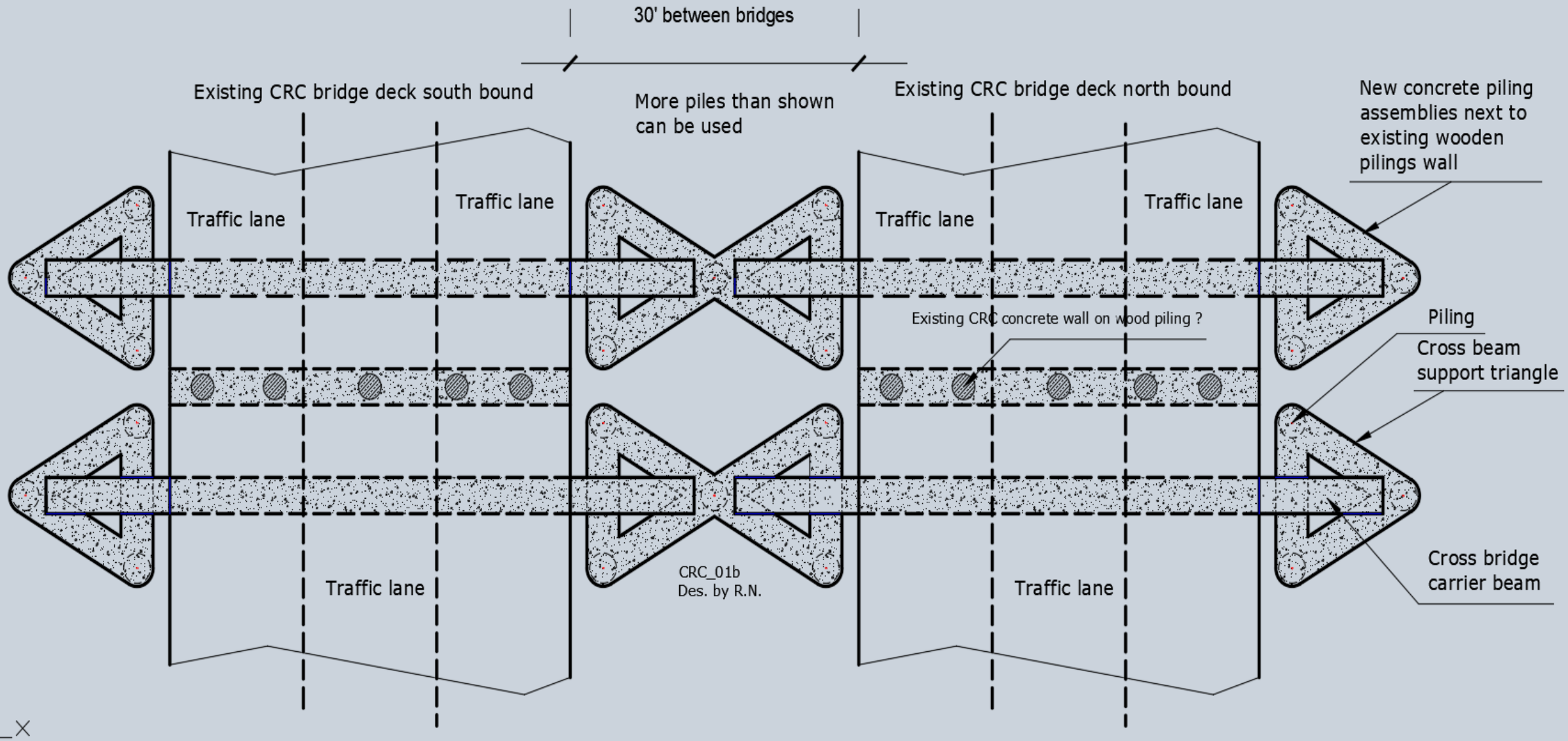
Alternative C: I-5 BRIDGE SEISMIC UPGRADE AND POSSIBLE ADDITIONAL TRAFFIC LANES

- I-5 lane closures are not required during seismic upgrade work.
- Major components will be pre-fabricated to speed-up construction and allow quality control.
- Construction will be done with barges equipped with the needed heavy machinery.
- The existing steel is still in excellent shape and can last another 100 years if properly maintained.

COLUMBIA RIVER CROSSING BETWEEN OREGON AND WASHINGTON
Seismic I-5 Bridge Upgrade Solution and Aerial View of Bridge Sections

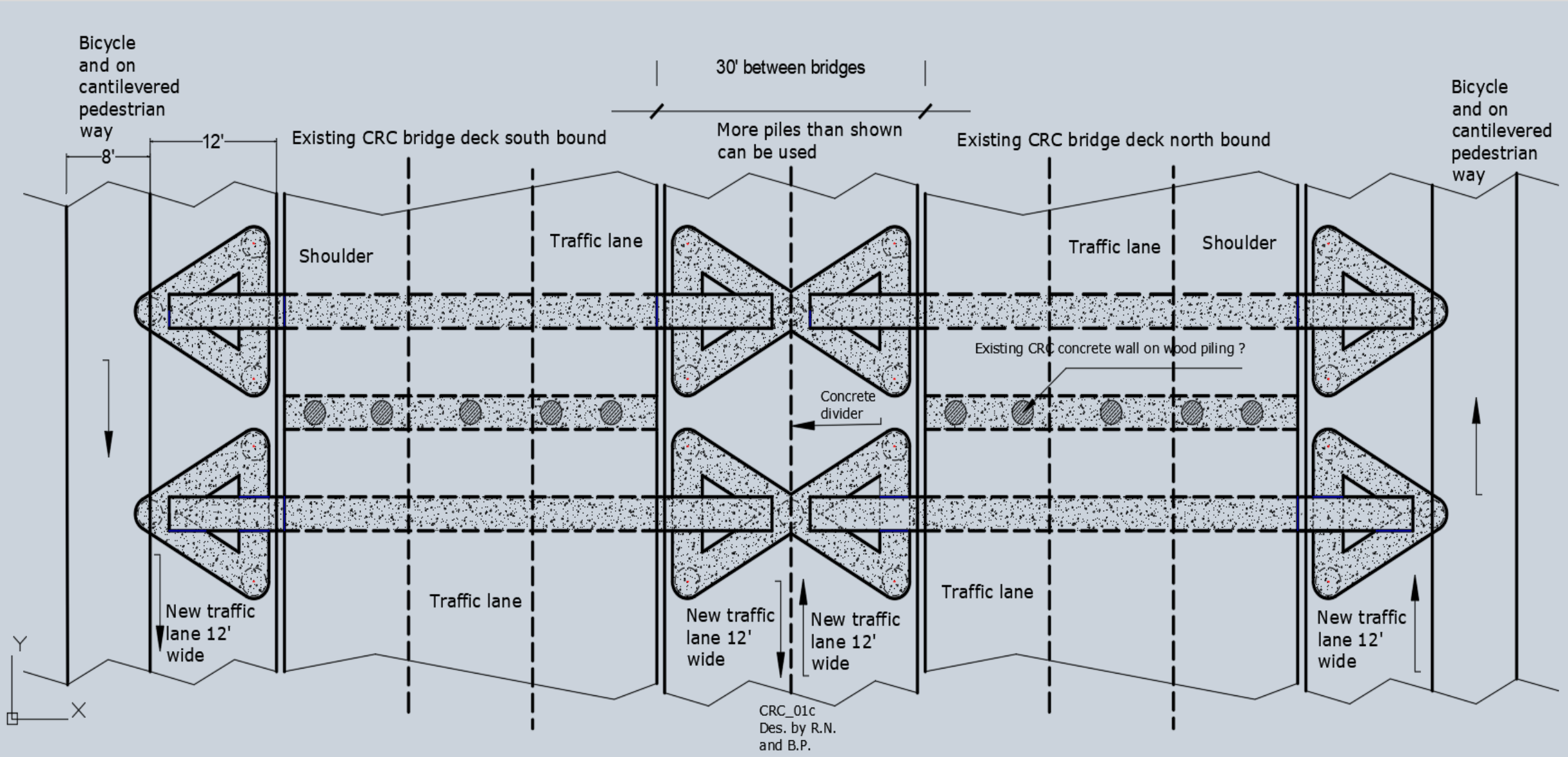


OPTION 1: NEW SEISMIC UPGRADE SOLUTION
Existing Condition



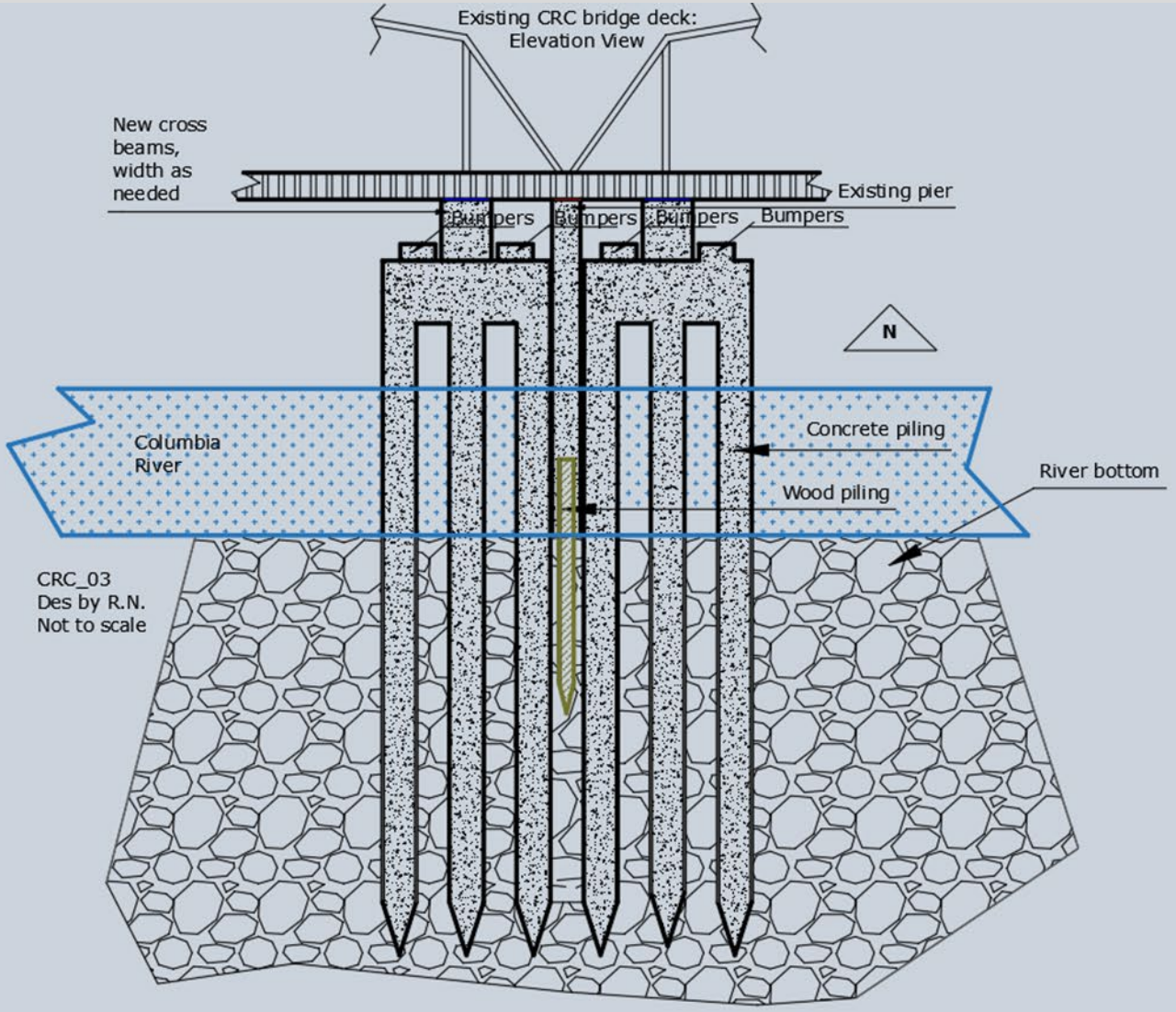
OPTION:2 NEW SEISMIC UPGRADE SOLUTION WITH ADDITIONAL TRAFFIC LANES

Four Added Lanes and Shoulders with Bicycle and Pedestrian Ways on the New Pilings



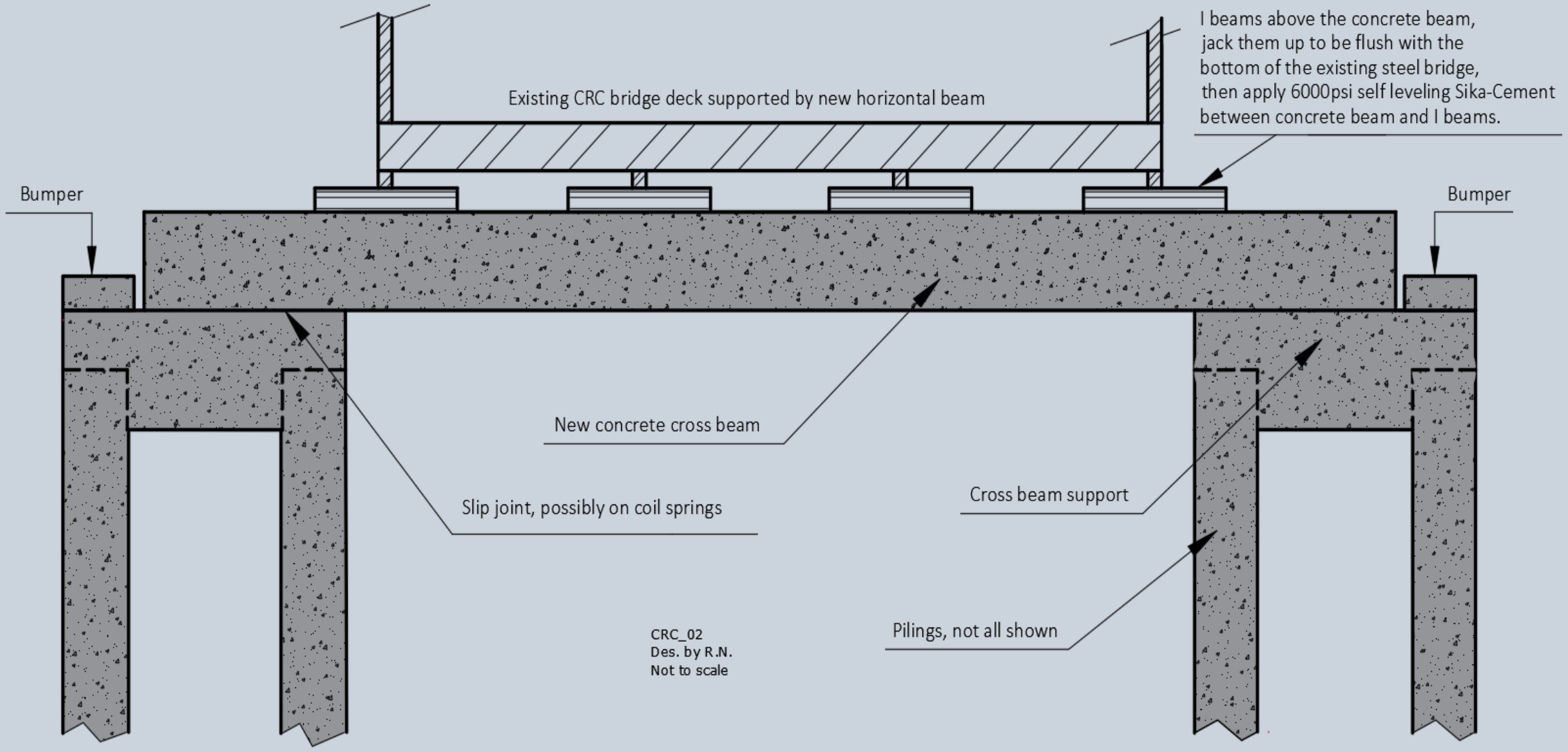
CROSS SECTION VIEW

Existing Center Pile is Wood



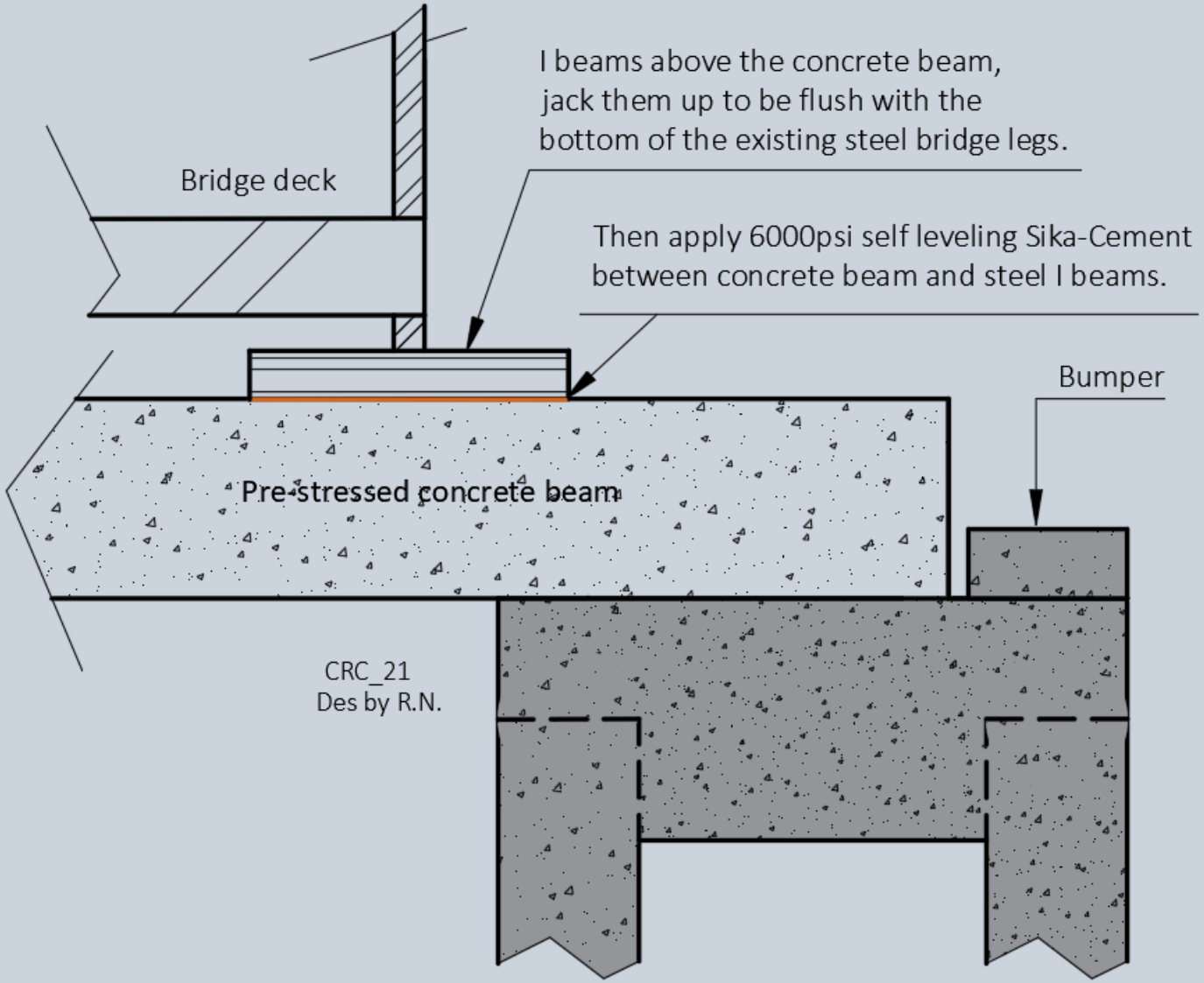

High point section
I-5 bridge undercarriage with locations for concrete cross beams

I-5 BRIDGE OVER COLUMBIA RIVER
Seismic Upgrade Solution in Elevation View



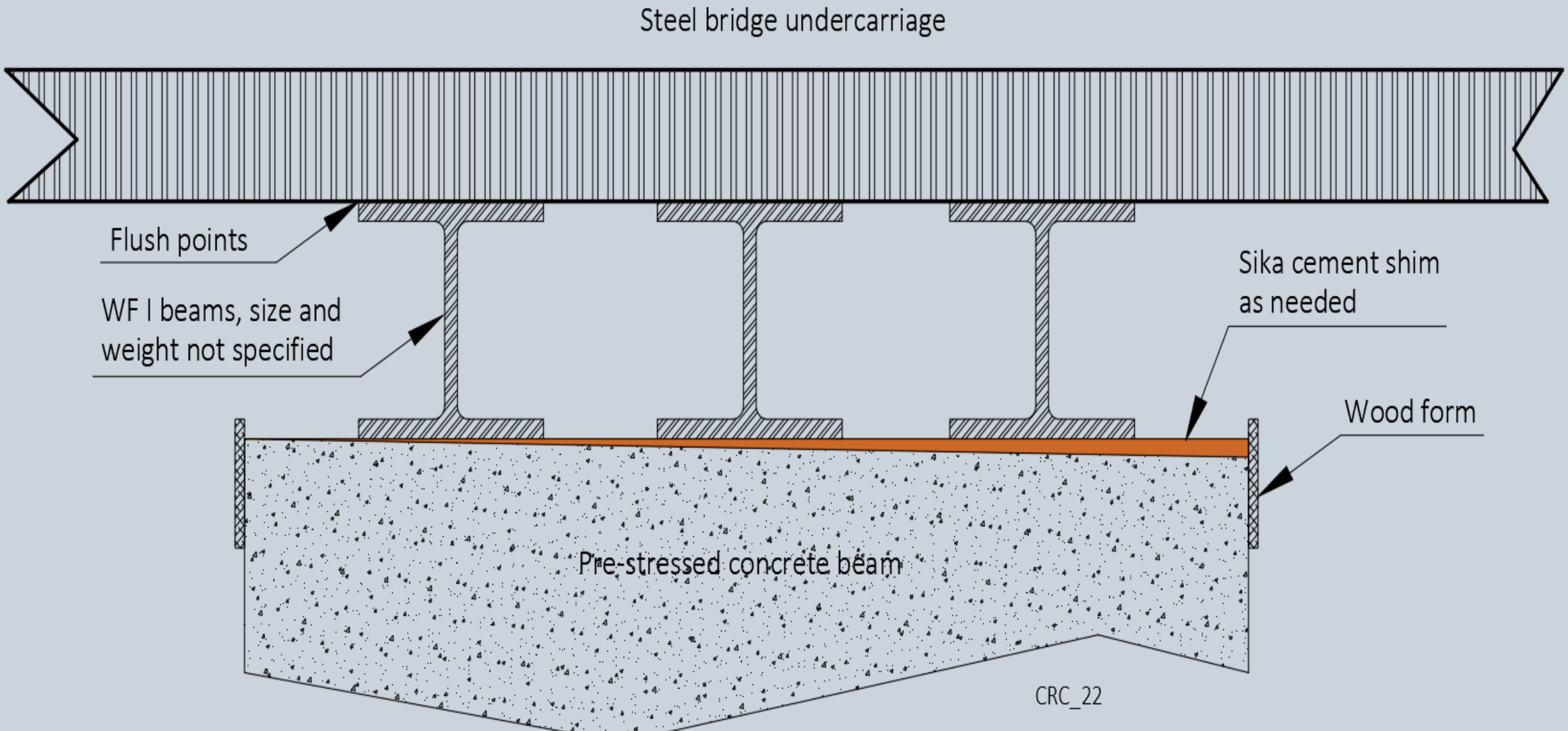
I-5 BRIDGE OVER COLUMBIA RIVER

Shoe Above I-Beam Assembly



I-5 BRIDGE NEW SHOE DETAIL

Keep I-Beams Flush with Bridge Undercarriage. Apply Sika Cement Shim to Fill Voids.



Alternative D: NEW CENTER LIFT SPAN FOR EXISTING BNSF FREIGHT RAIL BRIDGE

- New center lift span on the BNSF Bridge eliminates the need for existing swing span.
- New center lift span on the BNSF Bridge avoids “S” curve to center of I-5 Bridge.
- Center of the I-5 Bridge is 80 feet taller than existing lift near north bank of Columbia River.
- With new center lift span on existing BNSF Bridge, most river traffic will have a straight channel to traverse under the I-5 and BNSF Bridges.
- This new straight channel for ships and boats will reduce 90% to 95% of I-5 Bridge lifts.