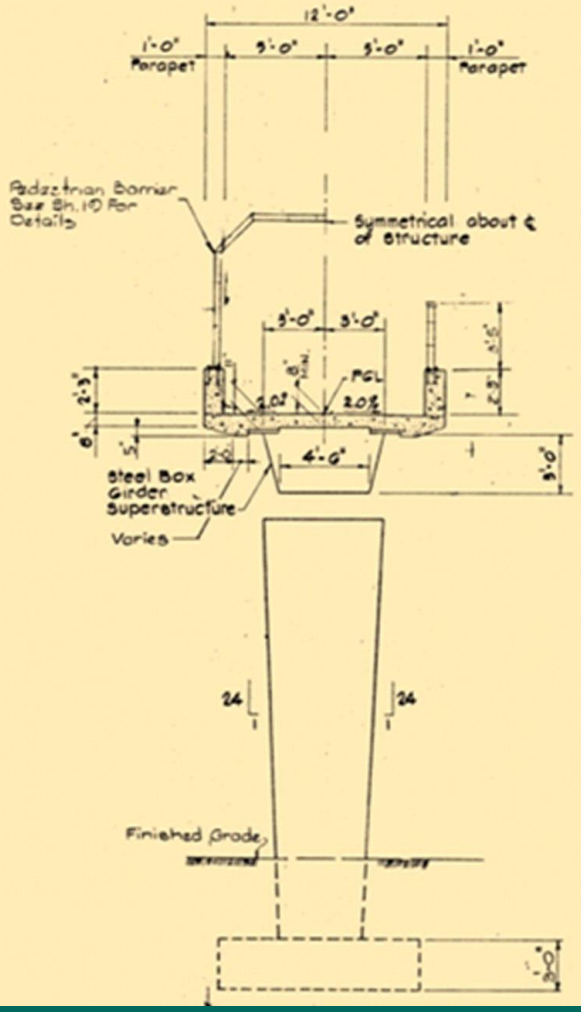
DOWNTOWN COLUMBIA BRIDGE

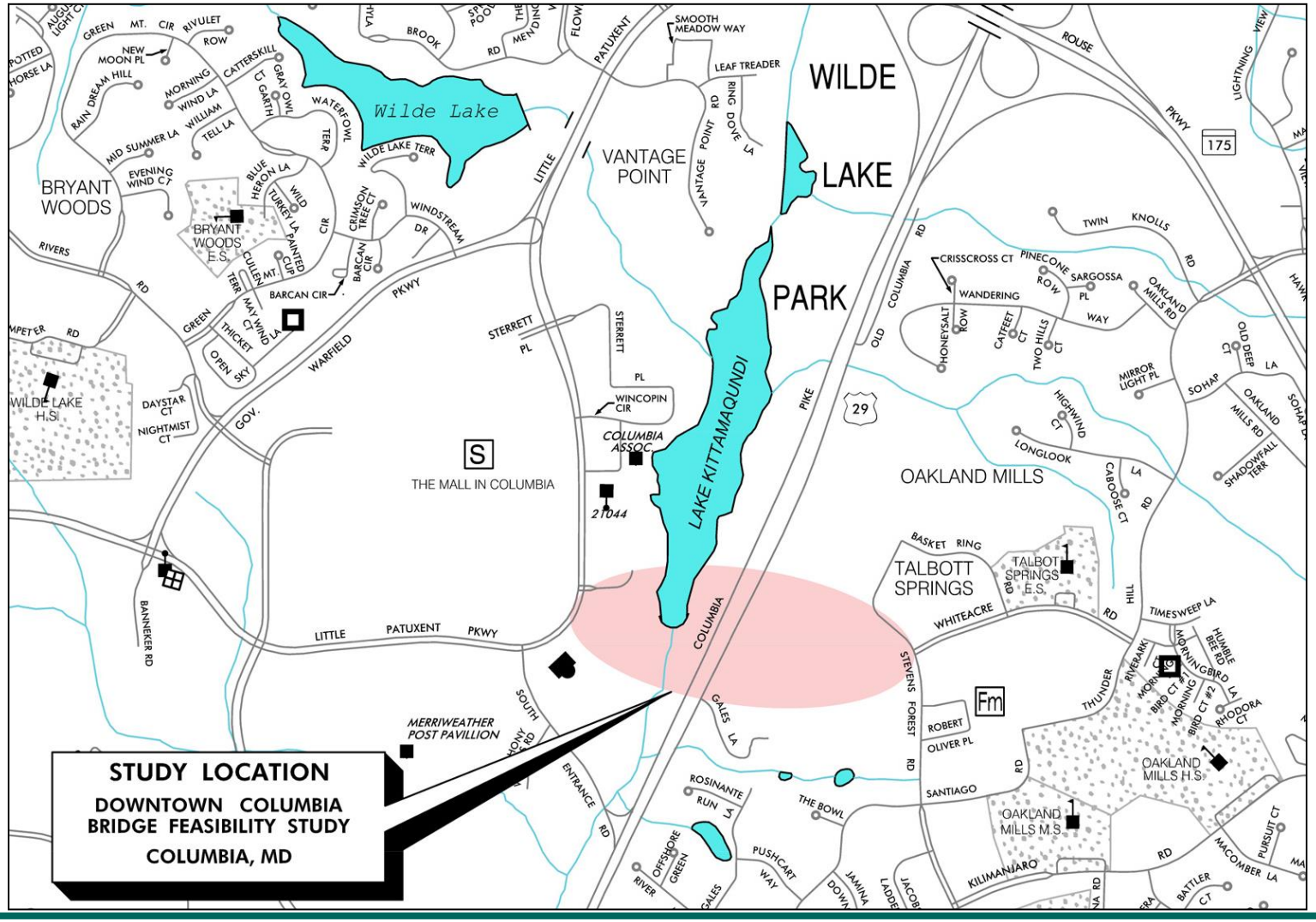
Baltimore Regional Transportation Board

September 22, 2015

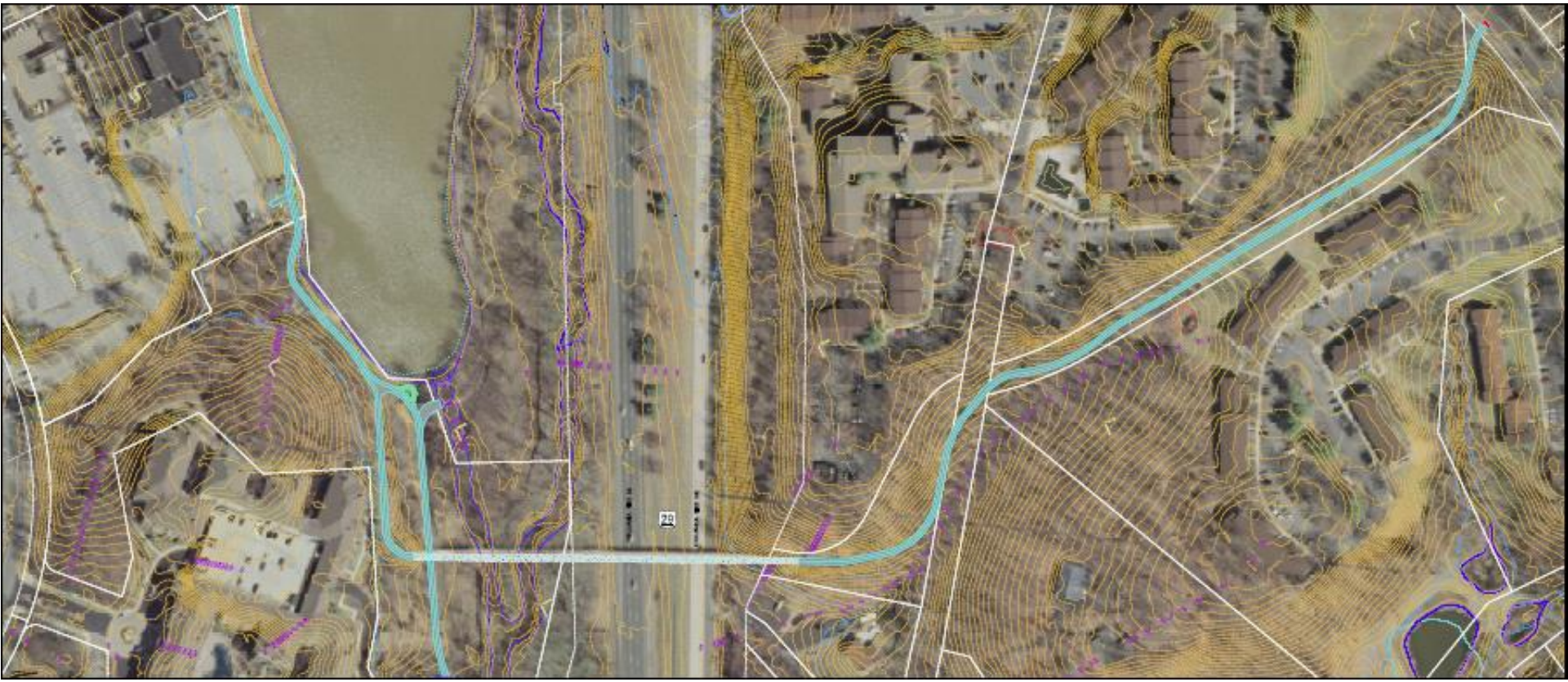
DOWNTOWN COLUMBIA BRIDGE FEASIBILITY STUDY



STUDY AREA


Wilde Lake
WILDE LAKE
VANTAGE POINT
BRYANT WOODS
BRYANT WOODS E.S.
WILDE LAKE H.S.
LAKE KITTAMAQUNDI
PARK
THE MALL IN COLUMBIA
COLUMBIA ASSOC.
21044
OAKLAND MILLS
TALBOTT SPRINGS
TALBOTT SPRINGS E.S.
OAKLAND MILLS H.S.
OAKLAND MILLS M.S.
MERRIWEATHER POST PAVILLION
LITTLE PATUXENT PKWY
WARFIELD PKWY
STERRETT PL
WINCOPIN CIR
BARCAN CIR
WILDE LAKE TERR
WATERFOWL TERR
CRIMSON TREE CT
WINDSTREAM DR
LEAF TREADER
SMOOTH MEADOW WAY
VANTAGE POINT RD
RING DOVE LA
TWIN KNOLLS RD
CRISSCROSS CT
PINECONE ROW
SARGOSSA PL
WANDERING WAY
HONEYSALT ROW
CATFEET CT
TWO HILLS CT
OAKLAND MILLS RD
OLD DEER CT
MIRROR LIGHT PL
HIGHWIND CT
LONGLOOK LA
GABOOSE CT
SHADOWFALL TERR
BASKET RING
WHITEACRE RD
TIMESWEEP LA
HUMBLE BEE RD
MORNINGBIRD LA
BIRD CT #1
BIRD CT #2
RHODORA CT
THUNDER
RIVERARK
STEVENS FOREST RD
ROBERT
OLIVER PL
SANTIAGO RD
THE BOWL
ROSINANTE RUN LA
OFFSHORE GREEN
RIVER GALES
PUSHCART WAY
KILIMANJARO RD
PURSUIT CT
MACOMBER LA
BATTLER CT
GALES LA
ENTRANCE RD
BANNEKER RD
GOV. RD
PIKE
ROUSE PKWY
175
29
STUDY LOCATION
DOWNTOWN COLUMBIA
BRIDGE FEASIBILITY STUDY
COLUMBIA, MD

STUDY AREA



STUDY AREA

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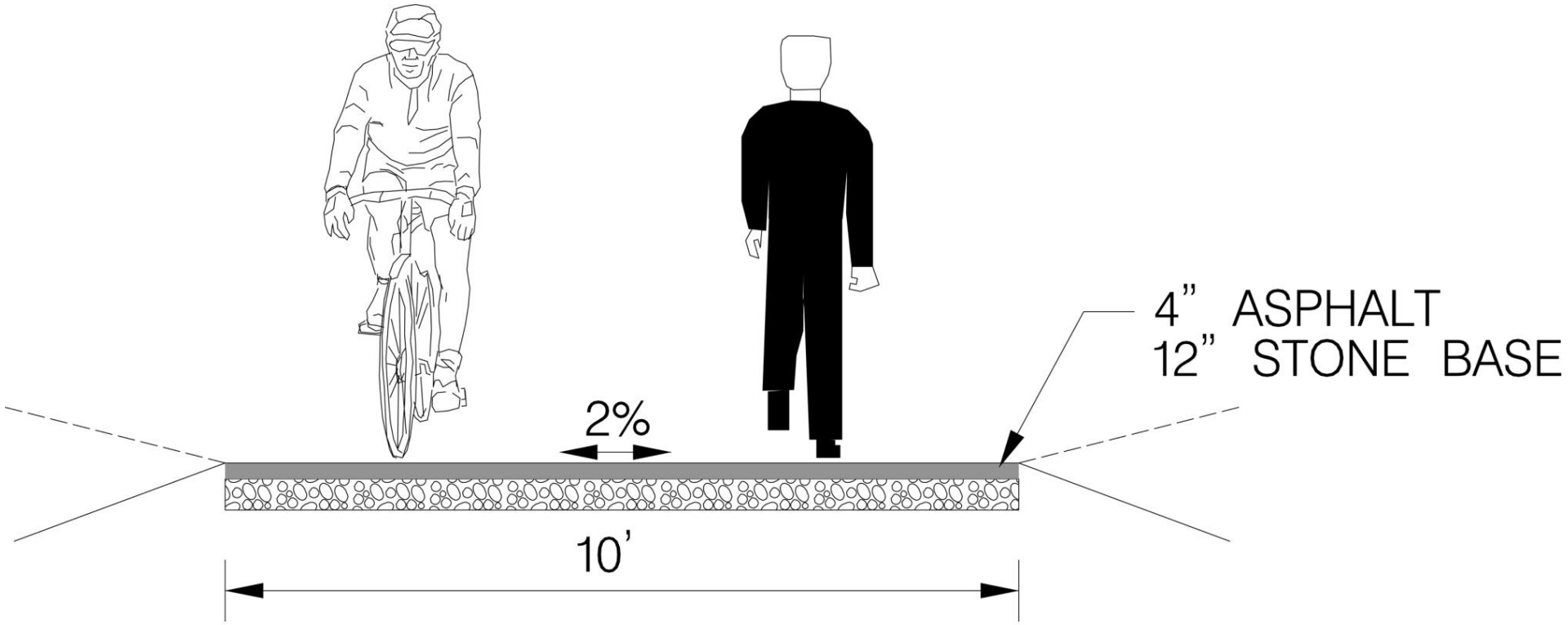
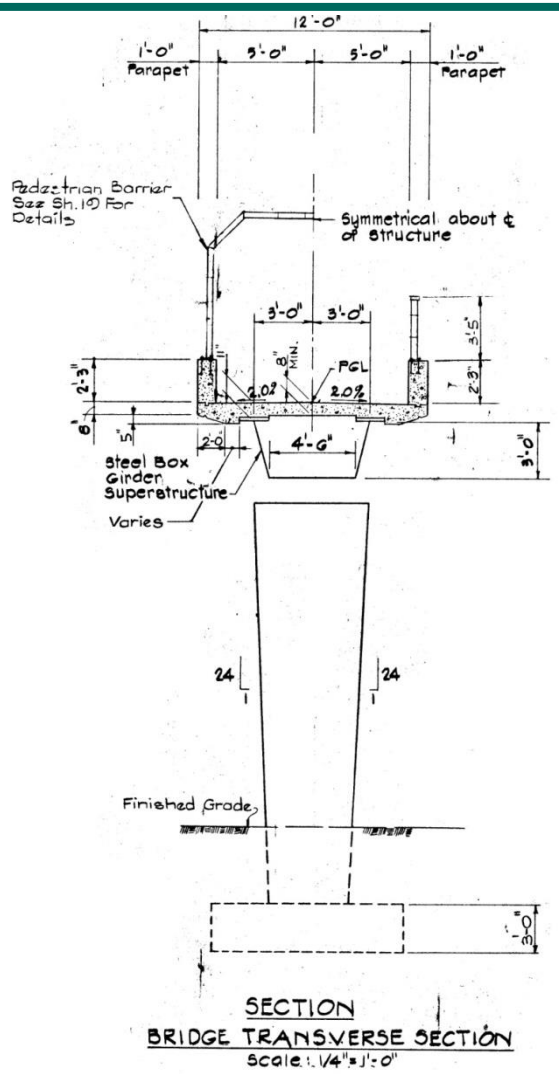


TYPICAL 10' TRAIL SECTION (BIKE/PED ONLY)

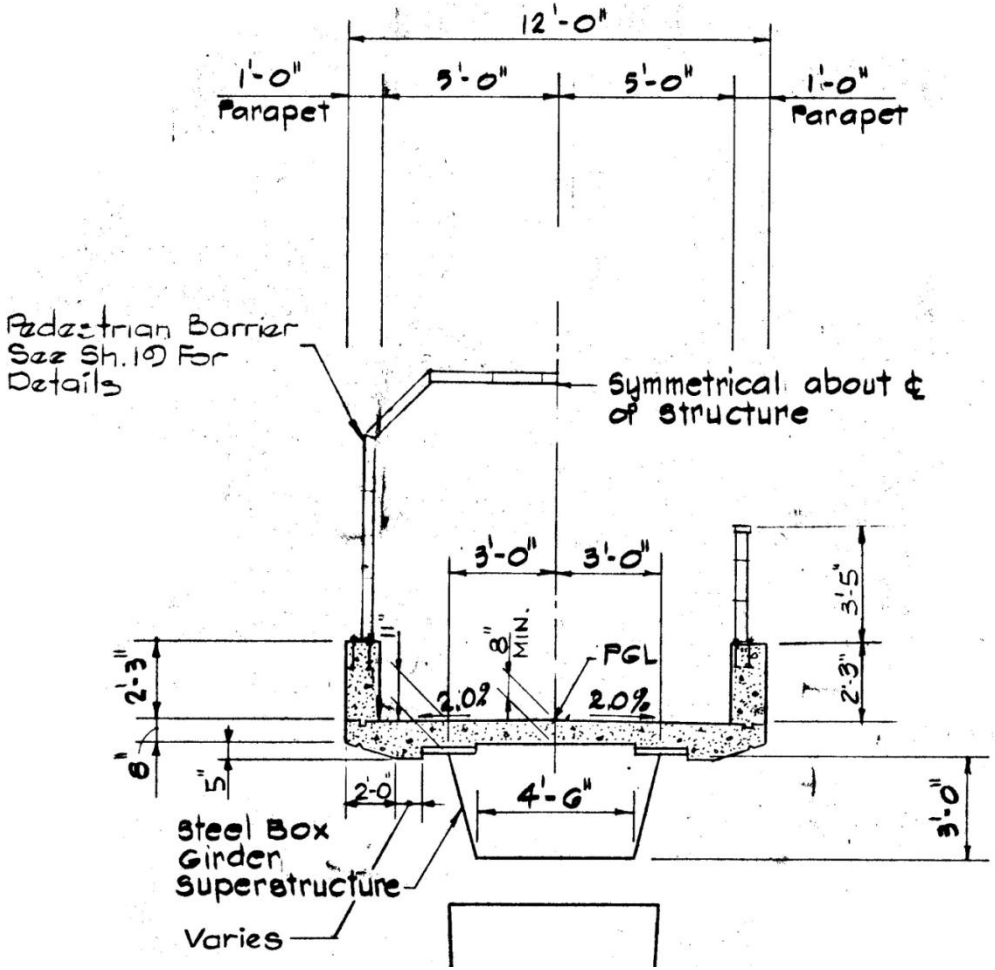
EXISTING CONDITIONS



Description

- Six span, single steel box girder system
- 679 feet length
- Design load specified in the bridge plans is an H10 vehicle or 85psf pedestrian loading, whichever governs. *(Pedestrian loading governs)*
- H10 vehicle is 20,000lbs

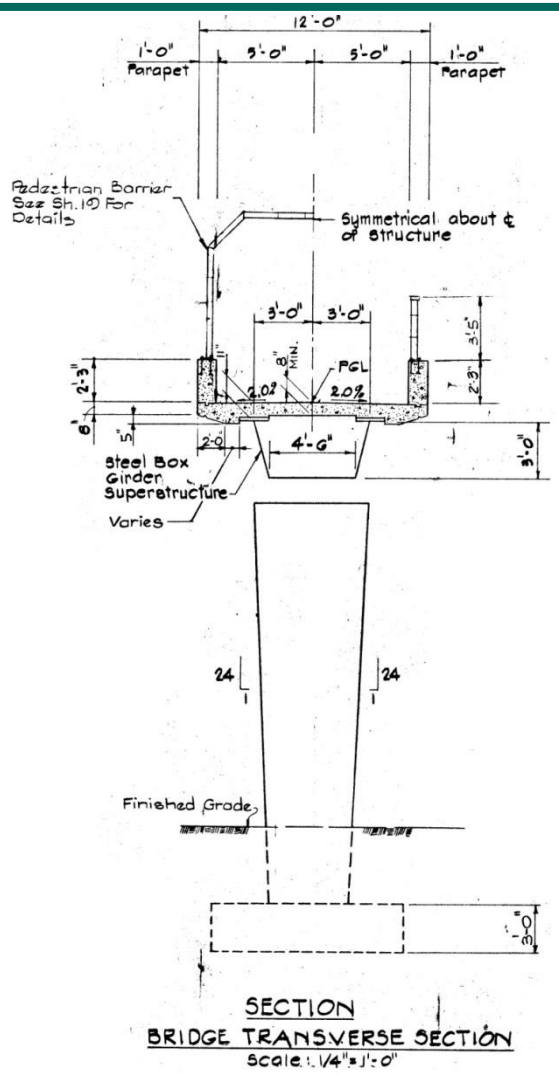
EXISTING CONDITIONS



Description

- 10 foot inside width
- Acceptable for bike/ped
- Usable for transit (up to 20,000 lbs)
- Insufficient width to accommodate bike, ped and transit together

EXISTING CONDITIONS



Condition

- The deck is in good condition.
- Coating on the parapet is peeling in spots.
- The girder is in very good condition.
- The substructure (abutments and wingwalls) is in very good condition.

EXISTING CONDITIONS

Summary of Existing Conditions Analysis:

1. **The existing bridge is in good condition and can support many more years of activity**

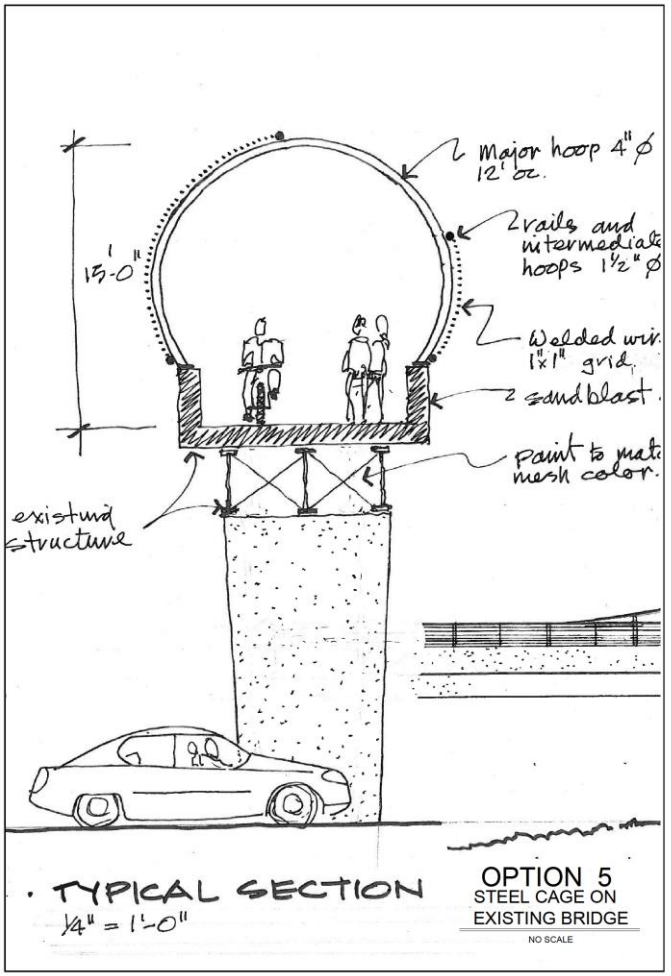
2. **The existing bridge, however, cannot support bike, pedestrian and transit use at the same time**

3. **Renovation, retrofit or replacement should be considered to achieve transit**

OPTION 1

RETROFIT EXISTING BRIDGE

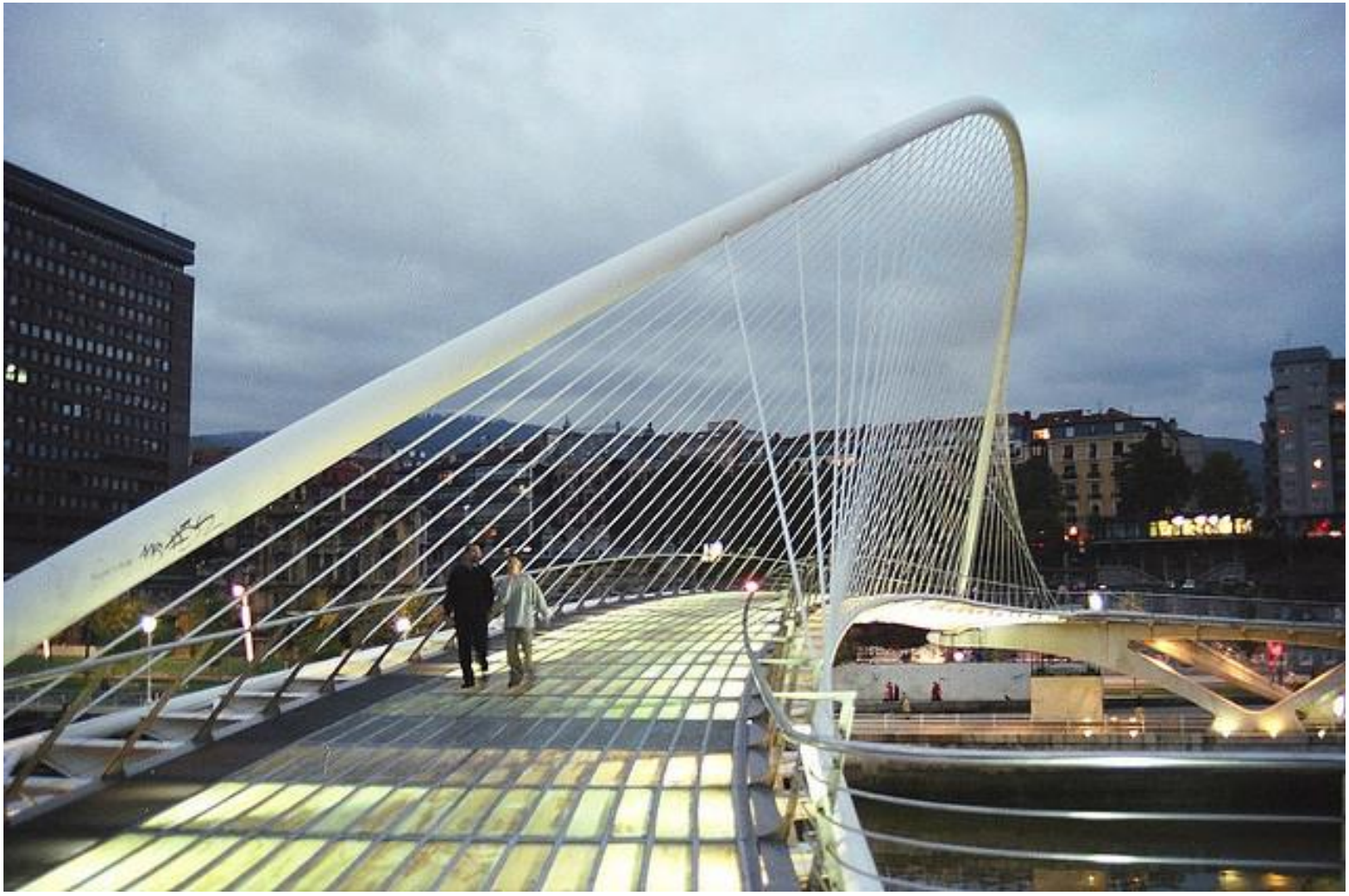
- LOWEST COST
- SHORTEST COMPLETION TIME
- MINIMAL ENVIRONMENTAL IMPACT
- INTEGRATES WITH DOWNTOWN COLUMBIA PATHWAY



Source:
Dorton Design

OPTION 1

OPTION 1



OPTION 1

OPTION 1

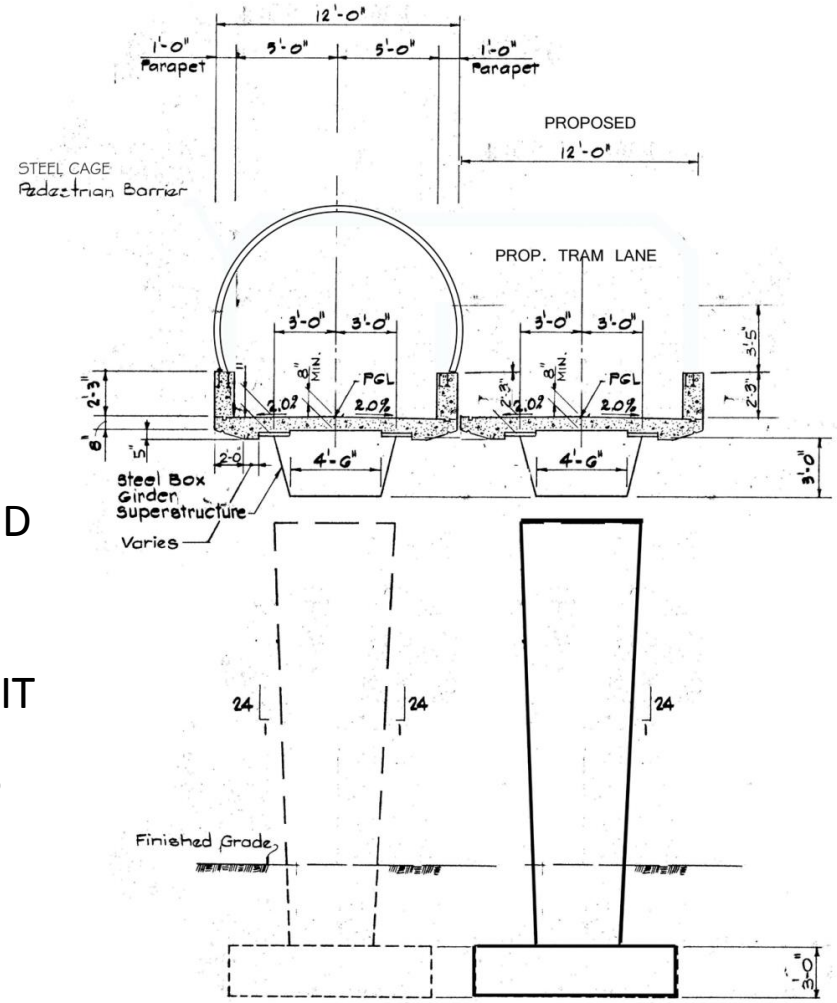
OPTION 1

OPTION 1

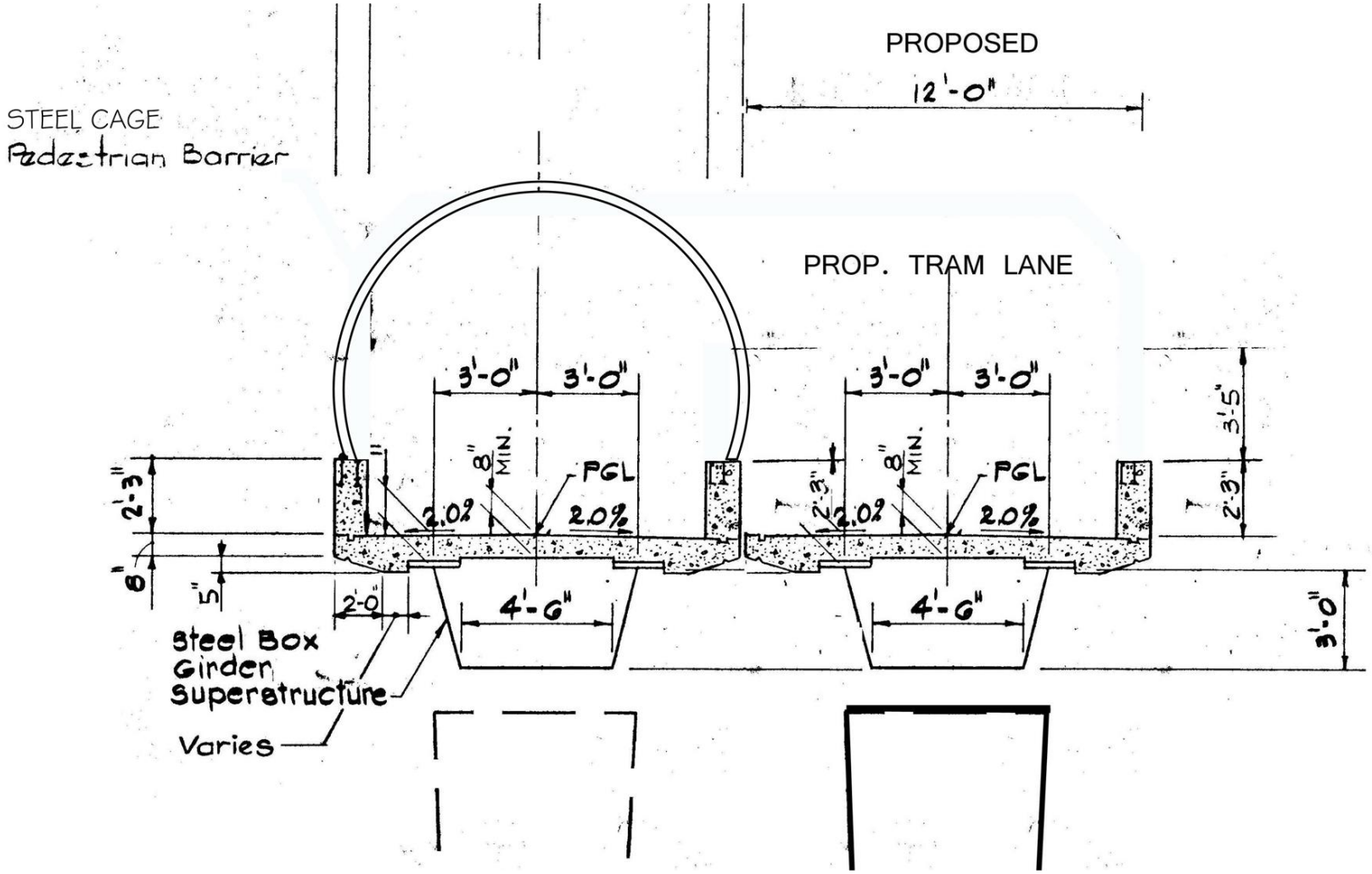
OPTION 2

COMPLIMENTARY BRIDGE WITH SINGLE LANE TRANSIT

- LOWEST COST AND SHORTEST COMPLETION TIME FOR TRANSIT
- TRANSIT LANE AND TRAIL APPROACHES NEED TO EAST AND WEST
- PULL OFF AREAS ALSO NEEEDED FOR TRANSIT
- MINIMAL ENVIRONMENTAL IMPACT AS THIS OPTION TIES INTO EXISTING BRIDGE



OPTION 2


PROPOSED
12'-0"
STEEL CAGE
Pedestrian Barrier
PROP. TRAM LANE
3'-0"
3'-0"
3'-0"
3'-0"
3'-5"
2'-3"
8" MIN.
PGL
2.0%
2'-3"
6"
2'-0"
4'-6"
4'-6"
3'-0"
Steel Box
Girder
Superstructure
Varies

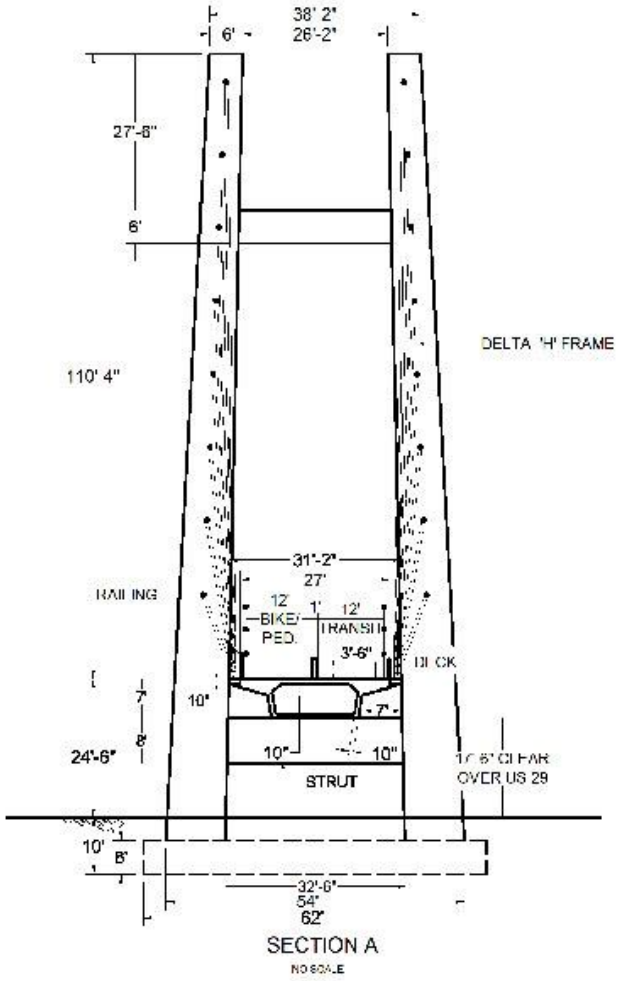
CABLE STAYED BRIDGE

A bridge in which the weight of the deck is supported by a number of cables running directly to one or more towers.

OPTION 3 (a)

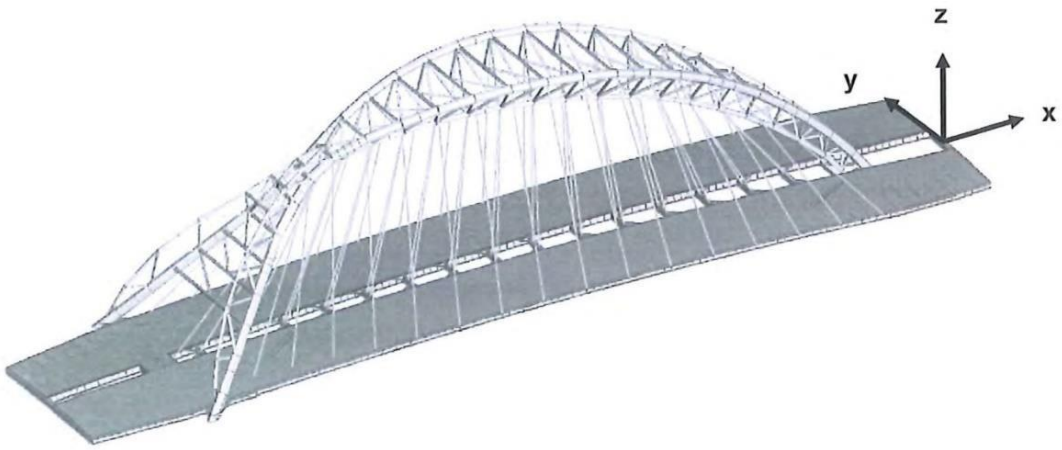
CABLE STAYED BRIDGE WITH SINGLE TRANSIT

- REQUIRES DEMO OF EXISTING BRIDGE
- PROVIDE A MAJOR LANDMARK FOR MOTORISTS
- TRANSIT AND TRAIL APPROACHES NEEDED TO EAST AND WEST
- PULL OFF AREAS ALSO NEEDED FOR TRANSIT
- HIGHER COST



OPTION 3 (b)

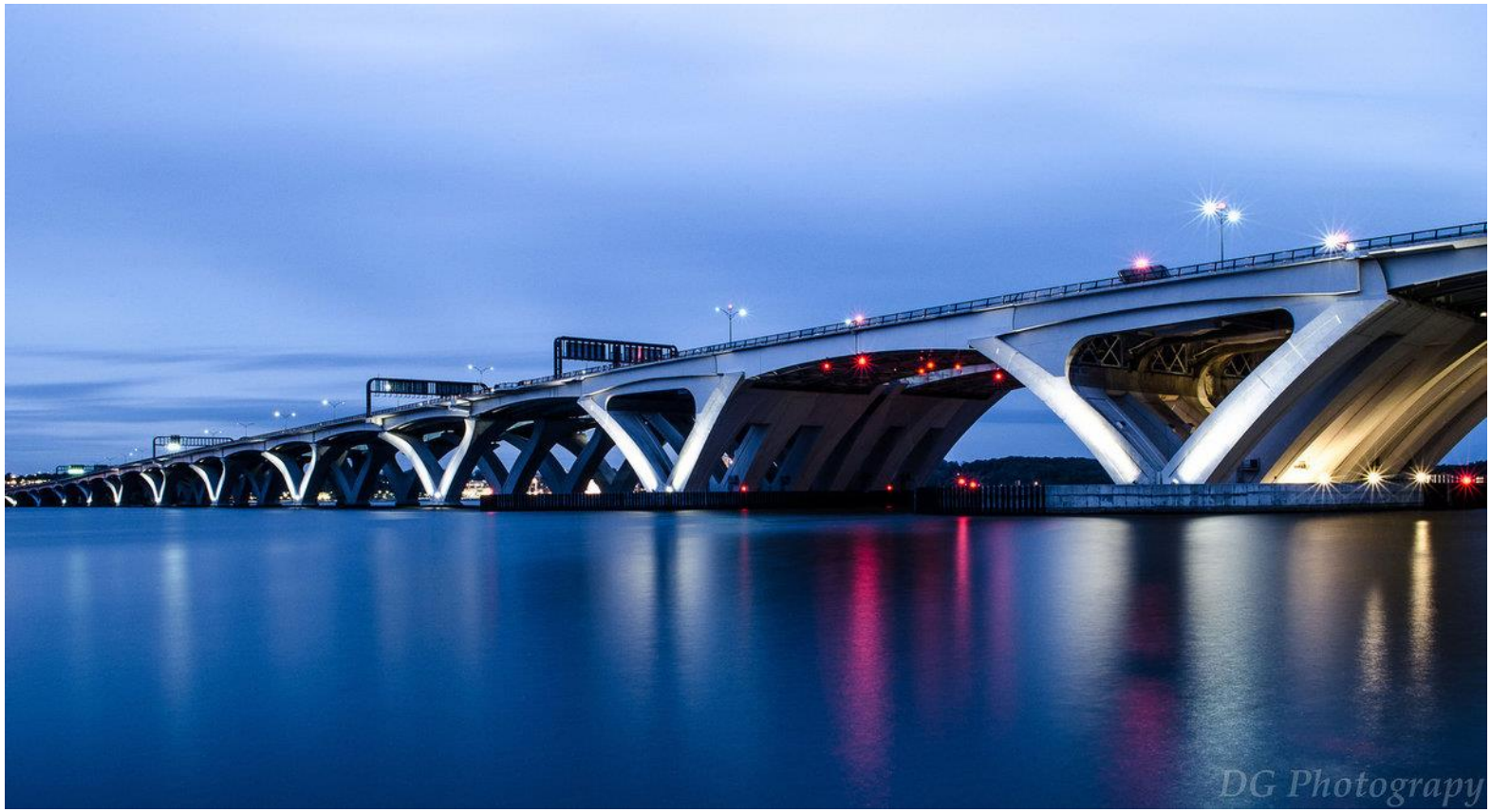
CABLE STAYED BRIDGE WITH DUAL LANE TRANSIT



- SAME AS 3a, EXCEPT WITH DUAL TRANSIT LANES
- APPROACHES TO EAST AND WEST INCUR ADDITIONAL ENVIRONMENTAL IMPACT WITH DUAL LANES
- HIGHER COST, SIMILAR TIMELINE TO SINGLE LANE TRANSIT

Iconic Bridge

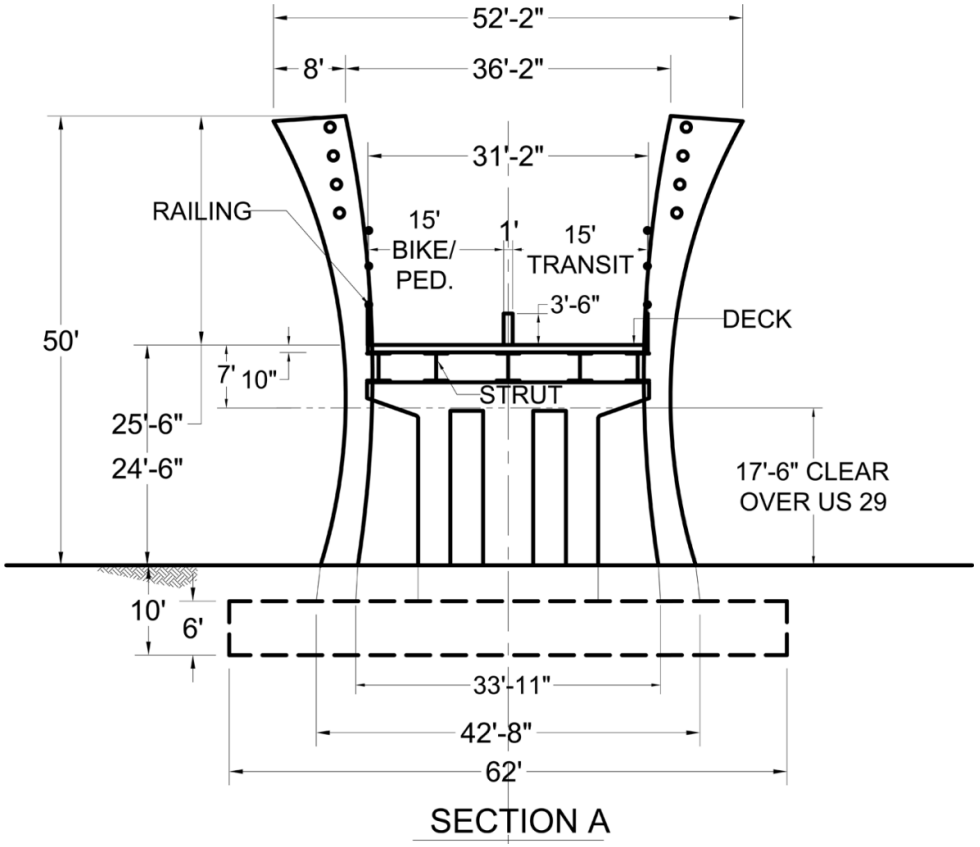
Unique gateway features



OPTION 4 (a)

ICONIC BRIDGE WITH SINGLE LANE TRANSIT

- ICONIC LANDMARK
- LOWER HEIGHT TOWER
- TRANSIT LANE AND TRAIL APPROACHES NEEDED TO EAST AND WEST
- PULL OFF AREAS NEEDED FOR TRANSIT



ICONIC BRIDGE WITH DUAL LANE TRANSIT

- SAME AS 4a, EXCEPT WITH DUAL TRANSIT LANES
- APPROACHES TO EAST AND WEST WOULD INCUR ADDITIONAL ENVIRONMENTAL IMPACT WITH DUAL LANES
- HIGHER COST BUT SIMILAR TIMELINE TO ICONIC BRIDGE WITH SINGLE LANE TRANSIT

OPTION 5 (a)

LAKE BRIDGE WITH PED, BIKE, DUAL LANE TRANSIT

- INCLUDES DEDICATED LANES FOR PEDESTRIANS, BICYCLES AND DUAL TRANSIT LANES
- SIGNIFICANT ENVIRONMENTAL IMPACT
- COULD REQUIRE SUPPORT TOWER IN LAKE
- SIGNIFICANT COST
- IMPACT TO NEIGHBORHOOD
- POTENTIAL OPPOSITION

OPTION 5 (b)

LAKE BRIDGE WITH DUAL TRANSIT ONLY

- NEW BRIDGE OVER LAKE FOR TRANSIT ONLY
- CONTINUE USE OF EXISTING BRIDGE FOR BICYCLE AND PEDESTRIANS
- SIGNIFICANT ENVIRONMENTAL IMPACT
- COULD REQUIRE SUPPORT TOWER IN LAKE
- SIGNIFICANT COST, ALTHOUGHLY SLIGHTLY LESS THAN INCLUDING BIKE AND PED
- POTENTIAL OPPOSITION

PERSONAL RAPID TRANSIT

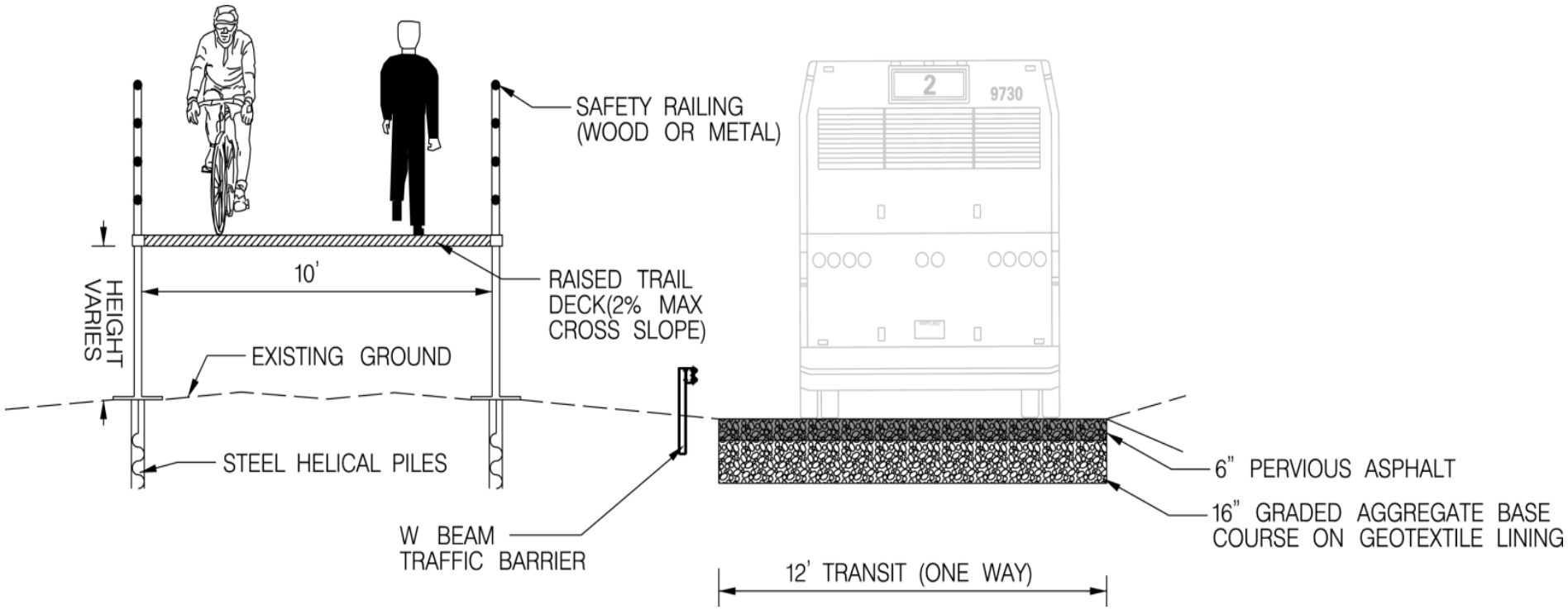
- EXISTING BRIDGE WOULD BE USED FOR BIKE AND PEDESTRIAN
- LESS EXPENSIVE THAN BRIDGES OVER LAKE BUT MORE EXPENSIVE THAN OTHER OPTIONS
- FIRST OF ITS KIND IN MARYLAND

PATH OPTIONS, BOARDWALK

BOARDWALK (along existing path)

- PROVIDES PATHWAY SEPARATION FROM TRANSIT FOR THE OPTIONS WITH ADJACENT TRANSIT BRIDGE
- LIMITS ACCESS FROM ADJACENT COMMUNITIES

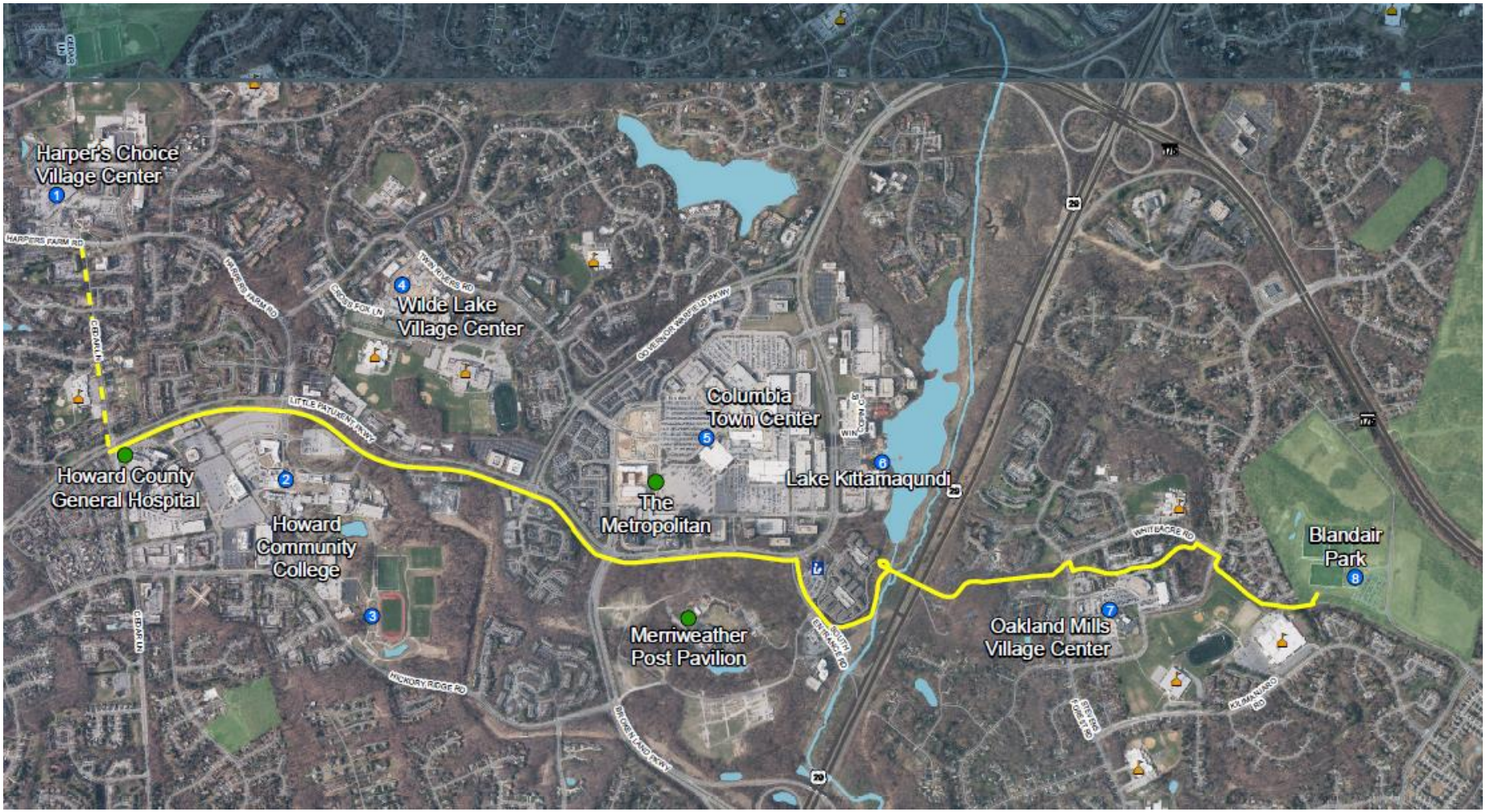
PATH OPTIONS, BOARDWALK



TRANSIT USING THE EXISTING BRIDGE?

- Bikeshare is a form of transit
- Would be available on demand, 24/7
- 6 minute ride from Oakland Mills Village Center to the Columbia Lakefront

PROPOSED COLUMBIA BIKESHARE PILOT



DOWNTOWN COLUMBIA PATHWAY

SUMMARY OF OPTIONS

Option Number / Description	*NEAT Cost	Eng. / Admin.	15% Inflation / 40% Contingency	Total Cost	Time
1 - Retrofit Existing Bridge	$914,692	$365,877	$781,147	$2,061,716	2.5-years
2 - Complementary Bridge w/Single Transit	$7,513,112	$3,005,245	$6,857,969	$17,376,325	7.5-years
3a - Cable Stayed w/Single Transit	$12,674,053	$7,604,432	$13,789,370	$34,067,854	9.2-years
3b - Cable Stayed w/Dual Transit	$14,274,559	$8,564,735	$15,530,720	$38,370,014	9.2-years
4a - Iconic Bridge w/Single Transit	$13,557,907	$8,134,744	$14,751,003	$36,443,655	9.2-years
4b - Iconic Bridge w/Dual Transit	$17,651,975	$10,591,185	$19,205,348	$47,448,508	9.2-years
5a - Lake Bridge w/Ped-Bike-Dual Transit	$60,097,978	$36,058,787	$65,386,600	$161,543,366	9.2-years
5b - Lake Bridge with Dual Transit	$45,439,822	$27,263,893	$49,438,527	$122,142,243	9.2-years
6 - Personal Rapid Transit	$37,332,723	$20,532,997	$39,348,690	$97,214,409	9.2-years

CONCLUSIONS/RECOMMENDATIONS

1. Implement Option 1 as soon as possible, including
   - Cage replacement
   - Painting
   - Lighting
   - Call Boxes
   - Video Cameras
   - Benches
   - Trash Receptacles

2. Open up existing pathways on either side of the bridge (removing trees/bush)

3. Further evaluation of new bridge options to include transit, including
   - Community input
   - Extensive research into funding options


EXITS 20A-B
175
Jessup
Columbia
Town Center
1 MILE
US-29

THANK YOU

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