OVAL COURT COMMUNITY
BURLINGTON

PEDESTRIAN BRIDGE
DESIGN & MAINTENANCE CONSIDERATIONS

MAY 22, 2024

BRANTHAVEN HOMES

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NAK Design Strategies was engaged by Branthaven Developments to review the preliminary design considerations for a new pedestrian bridge planned to link the future Oval Court Community to the existing Appleby GO Station in Burlington. The design considerations noted in this study are for discussion purposes only and are provided to assist stakeholders in understanding the potential development costs for the bridge. Information included in this study is based on inputs provided by bridge fabricators and informal discussions with municipal maintenance staff (City of Brampton). Further input and review by other consultants and suppliers will be needed to asses the final cost of the bridge upon confirmation of all development requirements by applicable stakeholders.

The bridge will cross Appleby Creek, and based on the top of bank setbacks provided by the conservation authority, will need to span a length of 43m. As this span can be achieved with prefabricated bridge structures, a prefabricated self-weathering steel bridge was deemed to be the most economical bridge option for this location and is included in the study as a baseline condition of development. As the bridge will support active transportation uses, a clear accessible width of 5m was used in the baseline condition of development, as this width was deemed to be a suitable width to accommodate significant pedestrian traffic in both directions of travel across the bridge. As design inputs from a traffic and lighting consultant was beyond the scope of this study, further review on the appropriate width of the bridge and lighting requirements will be needed.

In addition to the base level of development considerations, the study also identifies the associated maintenance requirements of the bridge that could be considered by the stakeholders.

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2. Pedestrian Bridge Inspiration..... Page 2

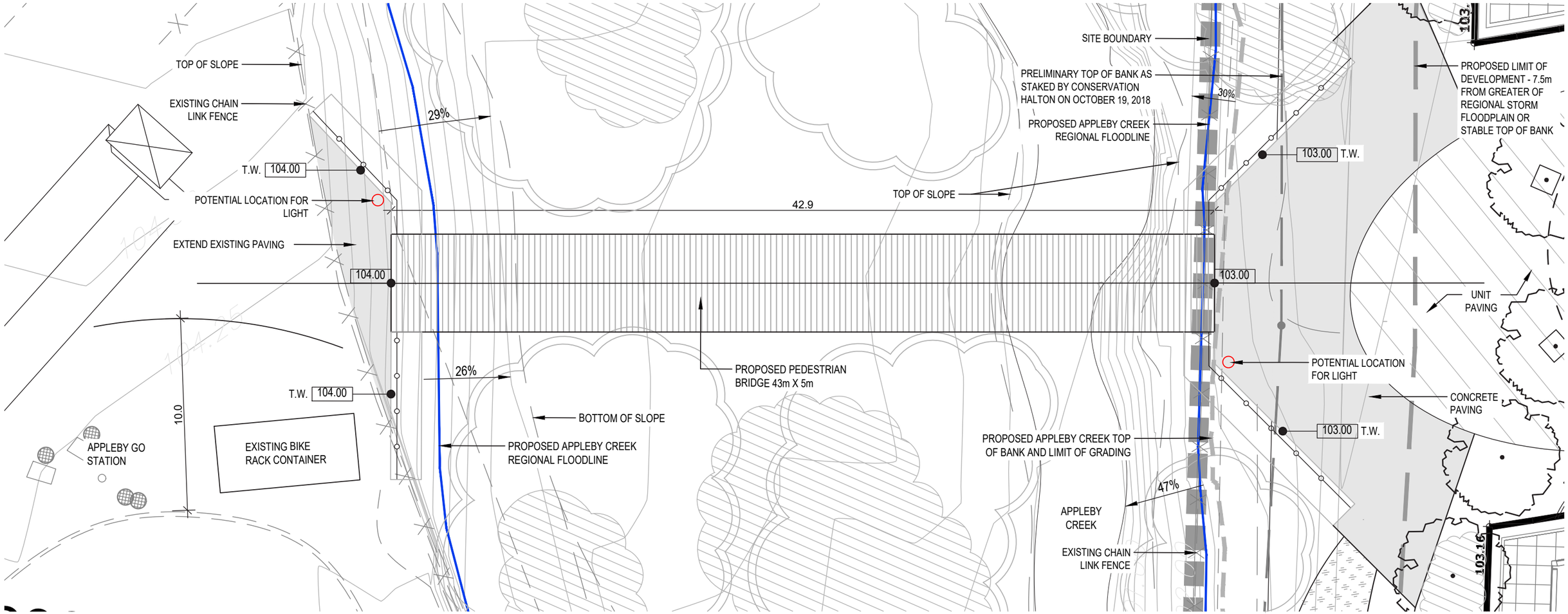
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4. Prefabricated Pedestrian Bridge (Base Level of Development): Maintenance Considerations.....Page 4

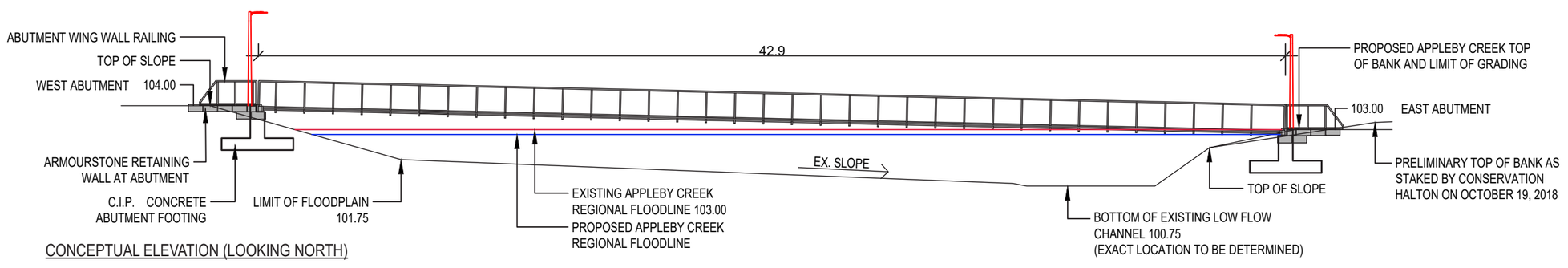
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PLAN (not to scale)



CONCEPTUAL ELEVATION (LOOKING NORTH)

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BOXGROVE COMMUNITY PARK BRIDGE
(BOX GROVE BY-PASS AND ROUGE BANK DR, CITY OF MARKHAM)

BRIDGE



- Self weathering steel frame
- 43m long x 5m clear width*
- 80kN maintenance vehicle loading or 4.0kPa pedestrian loading
- Nominal 2”x10” SPF PT wood decking
- Vertical picket system at pedestrian height
- Includes bicycle height barrier
- Includes stainless steel handrail
- Structure to be spliced in 2 locations longitudinally and transverse for entire length
- Includes delivery to Burlington
- Includes sealed shop drawings

Approx. $650,000+HST

ABUTMENT



- Poured-in-place concrete abutments
- Option to have armourstone but not included in the estimated price below

Approx. $70,000+HST

LIGHTING



Illuminate the bridge from each end with pole mounted lighting installed at an adequate height (2 fixures)

Approx. $25,000+HST
(excluding servicing costs)

AODA Design Criteria:

- Clear width (1.5m) and head room (2.1m)
- Firm, stable, and slip-resistant surfaces that canes, crutches, or the wheels of mobility devices will not sink into
- Openings in a path’s surface will be smaller than 20mm
- Long, narrow openings will be at right angles to the direction of travel
- Slope less than 5% along path of travel
- 1.3m high guardrail for cyclists

TOTAL:
APPROX. $750,000+HST

* The bridge width is subject to confirmation from the traffic engineer.

BRIDGE MAINTENANCE

Typical maintenance for a high traffic pedestrian bridge includes the following:

- Snow plowing
- Garbage cleanup
- Power washing winter salt
- Cleaning graffiti
- Occasional minor repairs

The estimated cost for the above noted items is **$5,000-10,000/year.**

LIGHTING MAINTENANCE

The maintenance of LED lighting includes:

- Cleaning of the lens every five years

The estimated cost for this is **$500/visit.**
(based on current market values - 2 fixtures)



NOTE:

- A brush-equipped snow removal machine would be needed to avoid damage to the wood decking surface.
- A wood deck is also more susceptible to damage and vandalism, therefore requiring more maintenance (i.e. replacement of boards, fasteners).
- Wood decking is easier to replace than other surface materials..