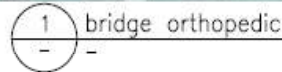


Strengthening Concept



1. This approach is proposed to find a solution to provide cycle/walkways to the Auckland Harbour Bridge, with better utilization of the total strength of the bridge components whilst providing benefits to the predicted lifespan the 'Clip on' lanes.
2. This concept is based upon a composite structural solution that shares peak loads from the 'overloaded Clip on' lanes to the 'underutilised' Truss Arch.
3. The load share mechanism is via a dynamic smart system. This system may only need to engage during peak load events to provide supplementary support to the 'Clip on' lanes.
4. The transfer of loads may occur as little as 5-10% in real time. This allows the bridge components to act as they were originally designed, most of the time.
5. The connection points and the resulting redistribution of peak loads are located such to maximise the beneficial effects to the 'Clip on' lanes, yet minimise the transfer loads to the Arch.

6. The locations of the connection points to the Truss Arch are also located to manage the differential movement effects between the 'Clip on' lanes and the Arch.
7. The heavy traffic vehicle loads currently prohibited from the 'Clip on' lanes, can utilise the dynamic transfer system to transfer load to the Arch.
8. The effects of the new increased heavy vehicle weights can also be better managed to minimise the effects to 'Clip on' lanes.
9. The reduction in peak load effects may actually increase the lifespan of the 'Clip on' lanes from fatigue effects.
10. If it was found to be necessary, the Truss Arch is simpler and more cost effective to strengthen, than strengthening the 'Clip on' lanes for additional traffic and / or cycle-walkway loads.

All dimensions to be verified on site before making any shop drawings or commencing any work.

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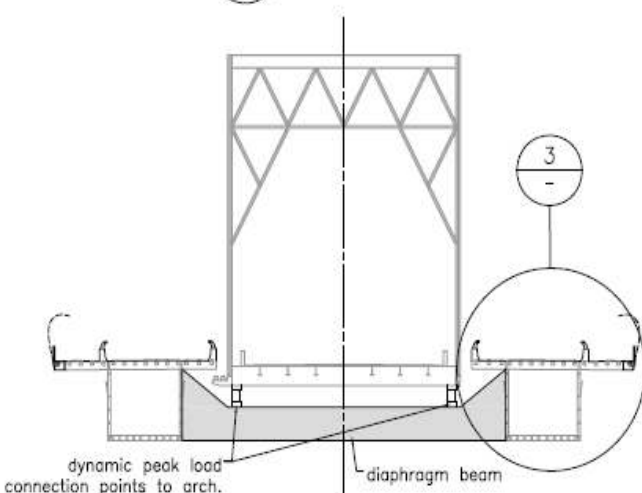
Client		Project Manager		Architect		 HolmesConsultingGroup STRUCTURAL AND CIVIL ENGINEERS 10/11 St. Hill Street, Auckland, New Zealand 01442-0000 PO Box 488, Auckland, New Zealand Telephone: 01442-0000	Auckland Harbour Bridge Cycleway		Sheet Title		Drawn: PFC	Scale: as indicated @ A1	
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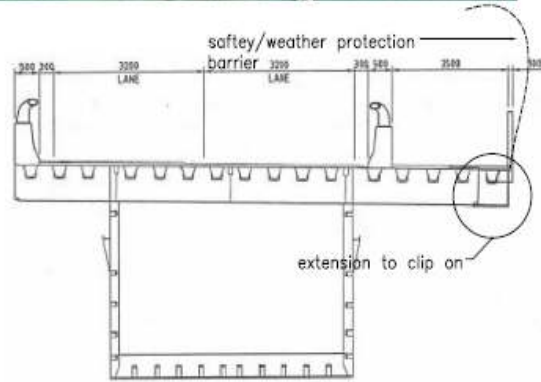
location of structural diaphragm beam and connection points to the Arch

location of structural diaphragm beam and connection points to the Arch

1 bridge orthopedic



2 proposed cross section at overarch



3 proposed X section

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1 20-08-20 PNO For Approval Rev Date By Reason									Orthopedic & Sections		Scale: as indicated @ A1 103787 S01-01 1	