



Ministry of Transportation and Infrastructure

Bridge Inspection and Assessment – E&N Railway, Vancouver Island, BC Canada

Phase 3 - Inspection Report Bridges from Mile 79.10 to Mile 135.10 (20 Bridges)

February 15, 2012

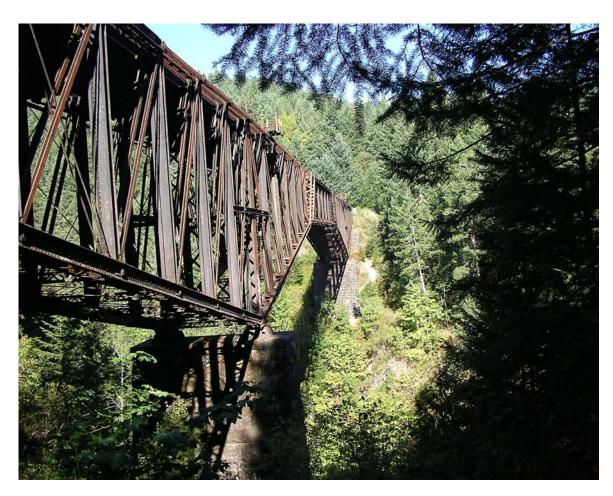
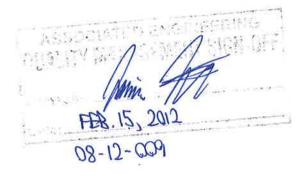




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INTRODUCTION

Bridge inspections were performed during October and November of 2011 on the Victoria Subdivision of the E&N Railway (currently the Southern Railway of Vancouver Island [SVI]). Twenty structures comprised of steel, timber and concrete were inspected between Nanaimo and Courtenay, British Columbia. This inspection was performed by the following individuals:

- Dale Harrison, P.Eng., Associated Engineering
- Mark Torrie, E.I.T., Associated Engineering
- Adam Laws, Associated Engineering
- Karam Bahi, Associated Engineering
- Nikola Cuperlovic, P.Eng., Associated Engineering
- Michael O'Connor, P.E., Alfred Benesch & Company
- Phil Walsh, P.E., Alfred Benesch & Company
- Scott Wojteczko, P.E., Alfred Benesch & Company
- Matthew Becker, E.I.T., Alfred Benesch & Company

All inspections were performed in teams of one to three persons and Bryon Reed or Al Kutaj of Southern Railway of Vancouver Island accompanied the inspection teams at all times.

The purpose of this inspection was to identify structural deficiencies within the bridges and to determine the extent of any section loss for rating purposes. This report describes our inspection techniques and summarizes the defects found at all bridges.

SCOPE OF INSPECTION

The primary focus of each bridge inspection was to evaluate and document the condition of all elements related to the bridges with particular attention given to non-redundant members of truss structures. The preferred method of inspection for bridges in this condition includes a close-proximity inspection of all bridge elements, however as stated in the project proposal dated September 14, 2011, the project budget constraints made it impossible to fully access and inspect all members. Ultimately, our approach focused on inspecting an appropriate sampling of representative and key structural members at all bridges. Therefore, when comments are made regarding condition of bridge elements they are based on only the elements inspected.

When water height allowed, inspection comments were made with respect to scour at substructure elements. Underwater inspection with divers was not completed. A snooper truck with hi-rail equipment was used to access difficult to access areas of large steel truss structures and structures located far off the ground. Non-destructive testing was performed on select bridges to search for internal defects within steel members of non-redundant structures. In addition, several bridges were observed as trains crossed to look for unexpected behaviors under loading.





<u>Inspection Techniques</u>

Several inspection techniques were utilized during this inspection:

<u>Visual</u> - A visual sampling of steel, timber and concrete components and their

surrounding areas was conducted on each bridge.

Sounding - A sampling of timber, concrete and steel bridge elements were hammer

sounded to help ascertain the presence of internal decay/voids or cracks.

Boring - Timber elements found to be deteriorated due to hammer sounding were drilled

with a 3/8" diameter drill bit. These holes were then inspected, using a shell and void indicator, to confirm the presence of internal decay and evaluate the remaining sound wood. The inspection holes were then plugged with a treated

wooden dowel.

On timber bridges, particular attention was paid to decay-vulnerable areas such as the ground line, waterline, brace bolt connections and bearing areas of the members. The size and location of internal voids were then recorded, along with any visual observations. Concrete and steel bridges were examined in areas which commonly develop structural deficiencies, such as bearing areas and connection points.

This inspection used subjective inspection techniques and also relied heavily upon human judgment. It is possible that some deficiencies may not have been discovered. The inspection does not guarantee that all defects have been identified in timber, steel and concrete members. Internal steel defects and defects in inaccessible areas may not have been located, as only visual inspection techniques were utilized. This inspection did not include underwater inspection or excavation of buried members. All field inspection notes are provided in Appendix B.

Methods of Access

All bridges were visually inspected from both track level and ground level. The team was able to view the majority of the critical bridge elements using this method of inspection. In some cases, ladders were used to gain access to abutment seats and bearings. A snooper truck was used to inspect bridges elevated great distances from the ground.

The snooper truck used was an Aspen Aerial UB-30 snooper truck equipped with hi-rail equipment. The snooper truck had a maximum reach of approximately 40 feet below the track level and 30 feet above the track level. Two inspectors were able to work from the snooper bucket at all times. Inspectors were able to view many difficult to reach superstructure areas at close proximity using the snooper.

Each individual bridge report specifies the access method used. If "Snooper" is specified in the report, the inspection was performed using a snooper truck as well as track and ground access by foot. If "None" is specified, the inspection was performed from the track and ground on foot as well as ladder access.





Non-Destructive Testing (NDT)

Non-destructive testing (NDT) was performed by Acuren Group Inc. on Bridge 125.5 and the results are located in the Appendix A. Note only a sampling of pins and eye bars were tested at this bridge. The results of this sampling do not declare that other elements in the structure do not have issues.

Bridges Observed Under Load

As a supplement to the field inspections, several bridges were observed under load. The primary intent of the load testing was to identify any significant bridge movements (sway, settlement, etc.) and to identify how critical members were behaving. The load observation process was led by Benesch and AE; members of SVI's field staff assisted in the observations. The on-site team was spread throughout various locations on or around the bridge structures in an attempt to maximize the number of areas observed. It should be noted that only a sampling of each structure was seen under load; the loading was typically a short duration passing locomotive(s). For best results, the bridges should be observed under a full train of cars (at timetable speeds) providing sustained loading.

On 11/04/2011, the inspection team of Scott Wojteczko (Benesch) and Nik Cuperlovic (AE), assisted by Bryon Reed, Al Kutaj, and Mark Hughes (SVI), observed Bridges 79.1, 79.9 and 98.6 under the load of 2-GP9 locomotives at various speeds in both directions.

On 11/17/2011, the inspection team of Dale Harrison (AE), Jack Jiao (AE) and John Deenihan (AE), assisted by Bryon Reed (SVI), observed Bridge 125.5 under the load of 2-GP9 locomotives at various speeds in both directions.

The observations of the load testing are presented within the report at each relevant bridge location.





INSPECTION DOCUMENTATION

Inspection Report Layout

All bridge inspection reports contain the following information:

- Bridge Layout Photos
- General Bridge Data and Information
 - Feature crossed
 - Inspection date
 - o Nearest town
 - o Inspectors
 - o Number of spans
 - o Stream depth (if applicable)
 - o Flow direction of stream (if applicable)
 - o Deck type (open or ballast deck)
 - o Presence of walkways or handrails
 - o Span lengths and type (span length is center to center of bearing)
 - o Height above ground
 - o Total length of bridge (typically back to back of backwall)
 - o Access method
 - Observed under load
 - o NDT testing (if performed)
- Inspection Findings
- Bridge General Arrangement
- Photos of Bridge Defects



Element Condition

As mentioned in the Scope of Inspection section, all elements of a bridge structure were not inspected. Assigning a condition to each bridge element was therefore outside the scope of this report. General conditions (i.e. good, fair, poor, etc.) have been called out for groups of elements based on the defects observed collectively, however these conditions may not be indicative of the state of each individual member.

Span Types

Span types are documented in each inspection report. The following are the abbreviations used:

• DPG - Deck Plate Girder

• HDPG - Half-Depth Plate Girder

• TPG - Through Plate Girder

• WFB - Wide Flange Beam

• TT - Through Truss (Steel)

• DT - Deck Truss (Steel)

• CDT - Cantilevered Deck Truss (Steel)

• TPT - Timber Pile Trestle

• TFT - Timber Frame Trestle

Element Numbering System

All bridge elements perpendicular to the track, such as piers and bents, are numbered in increasing order from south to north (increasing milepost). All bridge elements parallel to the track, such as girders and stringers, are numbered from left to right looking north. Pins in pin-connected truss structures will be numbered, starting with zero, from low mile post number to high mile post number.

Noted Deficiencies

Deficiencies are noted throughout this report as observed at each bridge. Some of the deficiencies that were found are considered to be of low concern at this time while others are of a higher concern. In order to highlight the items that are of a higher concern, a section titled "Noted Deficiencies" has been added to relevant bridges at the end of the individual bridge reports. Noted deficiencies are defined as items that are in need of repair as a priority, preferably within the next year, in order to safely operate the bridge under train loadings.

If a bridge report does not have a "Noted Deficiencies" section it means that none of the deficiencies found were determined to be in need of high priority repair.





BRIDGE INVENTORY

Mileage	Subdivision	Feature Crossed
79.10	Victoria	Dumont Rd
79.90	Victoria	Green Lake
86.90	Victoria	Bonell Creek
87.20	Victoria	Hamilton Creek
93.00	Victoria	Englishman River
98.60	Victoria	French Creek
103.70	Victoria	Little Qualicum River
110.70	Victoria	Big Qualicum River
113.20	Victoria	Nile Creek
119.20	Victoria	Cook Creek (South Fork)
119.50	Victoria	Cook Creek (North Fork)
120.20	Victoria	Rosewell Creek
122.00	Victoria	Waterloo Creek
123.00	Victoria	Coal Creak
124.10	Victoria	Mill Creek
125.50	Victoria	Tsable River
126.15	Victoria	Buckley Bay Rd
127.60	Victoria	Hindoo Creek
131.10	Victoria	Washer Creek
135.10	Victoria	Trent River









Track View (Looking North)



Elevation View (Looking North)



FEATURE CROSSED: Dumont Rd.

INSPECTION DATE: 10/06/2011 STREAM DEPTH:N/A HEIGHT: 21 ft

NEAREST TOWN: Nanaimo, BC FLOW DIRECTION: N/A TOTAL LENGTH: 105 ft

 INSPECTORS: MT/KB
 DECK TYPE: Open
 SPANS: 13'-9" (TPT), 13'-3" (TPT), 14' (TPT),

 NO. OF SPANS: Seven
 WALKWAY: No
 2 @ 18'-8" (TFT), 13'-2" (TPT) & 13'-9" (TPT)

ACCESS METHOD: None HANDRAILS: No

NDT TESTING: No OBSERVED UNDER LOAD: Yes

Inspection Findings:

END BENT NOTES

End Bent Type: Timber Trestle

- Minor ballast and debris on end bent cap
- No significant defects noted at north end bent
- Pile 4 at south end bent has rot (2" solid shell)

WINGWALL NOTES

Wingwall Type: Timber Plank Wingwalls

- Wingwall planks separating slightly, causing erosion of embankment behind wingwalls (see attached photo)
- · No other defects noted

INTERMEDIATE BENT NOTES

- Intermediate bents are generally in fair condition
- Several piles were noted to have some section loss due to rot
- Pile 1 of the north bents is not bearing for a width of 4 inches (see attached photo)
- Several piles are splitting
- Diagonal bracing members are split at several locations

DECK NOTES

- Track located on a tangent alignment
- Ties = 8" wide x 8" deep x 10'-4" long
- Tie spacing = 12"
- Approximately 30% of bridge ties are poor
- South approach is low

SPAN NOTES

- · Stringers are generally in good condition
- Beam depths vary from 1'-4" to 2' (see attached photos)
- Bearing of deeper beam at Bents 1 & 5 is poor (only 4" of bearing on a 14" wide cap); (see attached photo)

OBSERVATIONS UNDER LOAD

Low south approach and rail joint at south end of bridge are creating high impact at Span 1





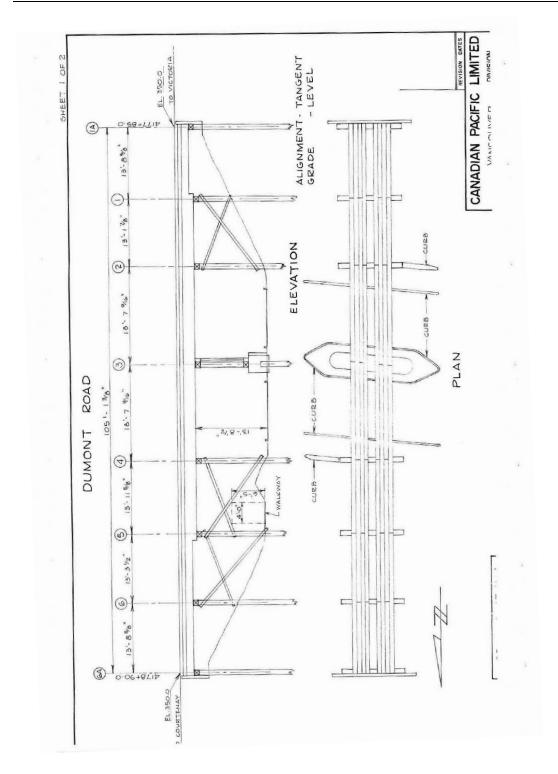
History:

• New bents and spans installed around 1983





Bridge General Arrangement:







Additional Inspection Photos:



End Bent View (Typical)



South Timber Wingwall (Looking South)



Pile Cap not Fully Bearing on Pile



Stringer View (Note Difference in Beam Depth)



Intermediate Bent in Roadway



Small (4") Bearing Width of Deeper Stringer





79.90 - Victoria Subdivision - Green Lake





Track View (Looking South)

79.90 - Victoria Subdivision - Green Lake





FEATURE CROSSED: Green Lake

INSPECTION DATE: 10/15/2011 STREAM DEPTH: 1 ft. HEIGHT: 26 ft

NEAREST TOWN: Lantzville, BC FLOW DIRECTION: N/A TOTAL LENGTH: 210 ft
INSPECTORS: MFB/DBH DECK TYPE: Open SPANS: 14 @ 15'-0" (TPT)

NO. OF SPANS: Fourteen WALKWAY: No (1 Refuge Bay)

ACCESS METHOD: Snooper HANDRAILS: No

NDT TESTING: No OBSERVED UNDER LOAD: Yes

Inspection Findings:

END BENT NOTES

South End Bent Type: Five round timber piles (11") with a timber cap (13" wide x 28" deep)

No significant defects noted

North End Bent Type: Concrete Cap (Timber Piles are Below Grade)

No significant defects noted

WINGWALL NOTES

Wingwall Type: Timber (South Wingwalls), Concrete (North Wingwalls)

- Some erosion at base of south wingwalls
- All wingwalls are generally in good condition

DECK NOTES

- Track located on a tangent alignment
- Ties = 8" wide x 8" deep x 12'-0" long
- Tie spacing = 11"
- 8 poor ties counted; bridge ties are generally in good condition
- Approach ties are swinging (pivoting with respect to rail) at north abutment

SPAN NOTES

Stringer Notes:

Stringer Type: Two 4-ply stringers (each ply is 9" wide x 17" deep)

- Many of the stringers have fire damage
 - Some stringers were replaced after fire
 - Stringers with damage have approximately 3/8" section loss on each charred face
- Other than burn damage, stringers are in good condition

Intermediate Bent Notes:

General Notes:

- Many of the piles have significantly reduced sections due to fire damage (see attached photos)
- All fire-damaged bent caps have reduced sections due to fire damage
- Rot was found in approximately 25% of the piles (see notes in Appendix B for details)
- Many of the piles have been posted (cut off and partially replaced),

79.90 - Victoria Subdivision - Green Lake





Extra Timber Member Notes:

- Most longitudinal diagonal bracing members exhibit fire damage
- Longitudinal horizontal struts have been added since the fire
- New sash and sway bracing (transverse) have been added since the fire

OBSERVATIONS UNDER LOADING

- Minor pile shaking observed
- Noticeable tie movement at south end (mostly from expected bending)

History:

- Original construction year = 1992 (According to plans)
- Bridge sustained fire damage in 2005 or 2006

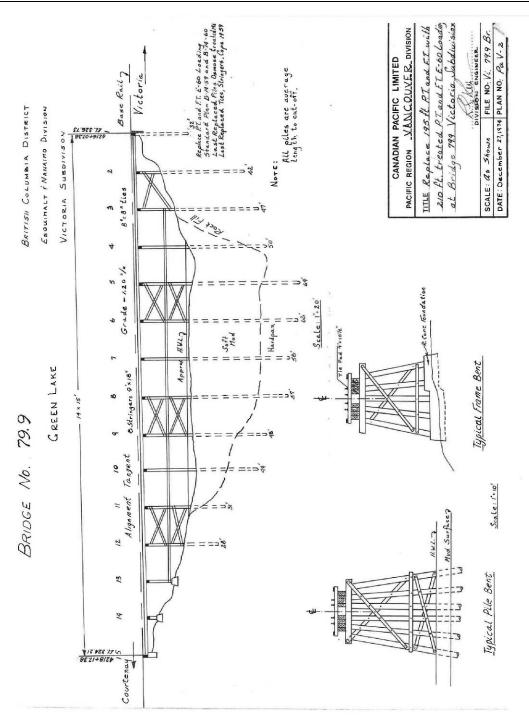
Noted Deficiencies:

- Several intermediate timber bents have two or more piles with section loss due to rot or fire damage
- Intermediate timber bent has three posted piles in a five pile bent



. 79.90 - Victoria Subdivision - Green Lake

Bridge General Arrangement:







79.90 - Victoria Subdivision - Green Lake

Additional Inspection Photos:



Intermediate Pile Bent Fire Damage (Typical)



Fire Damage of Pier (Typical)



Pile 4 at Bent 9 (Hollow and Fire Damaged)





86.90 - Victoria Subdivision - Bonell Creek





Girder View (Looking North)



Interior Diaphragm View (Typical)





86.90 - Victoria Subdivision - Bonell Creek

FEATURE CROSSED: Bonell Creek

INSPECTION DATE: 10/25/2011 STREAM DEPTH: 2 ft HEIGHT: 20 ft

NEAREST TOWN: Nanoose Bay, BC FLOW DIRECTION: East TOTAL LENGTH: 66 ft
INSPECTORS: APW/AL DECK TYPE: Open SPANS: 63'-1" (DPG)

NO. OF SPANS: One WALKWAY: No
ACCESS METHOD: None HANDRAILS: No

NDT TESTING: No OBSERVED UNDER LOAD: No

Inspection Findings:

ABUTMENT/BACKWALL NOTES

Abutment Type: Cast-In-Place Concrete

- Horizontal cracking in south abutment backwall
- South abutment backwall rotated in about 1 ½" at top
- Minor horizontal cracks at both abutments

WINGWALL NOTES

Wingwall Type: Cast-In-Place Concrete

- · Minor horizontal cracking in all wingwalls
- South abutment Wingwalls are leaning in about 1 ½" at top
- Crack at top corner of north wingwall

DECK NOTES

- Track located on a tangent alignment
- Ties = 10" wide x 16" deep x 12'-0" long (1/2" dap)
- Tie spacing = 16"
- Ties are in good condition overall (8 ties counted as poor)

SPAN NOTES

Bearing Notes:

- Expansion bearing at south abutment no significant defects
- Fixed bearing at north abutment no significant defects

Girder Notes:

- Steel is in good condition overall
- Pitting measured at approximately 1/8" near abutments (2' in length)
- Top flange covered with timber
- Pitting 1/8" up vertical leg of bottom flange angle for 2" near bearing

History:

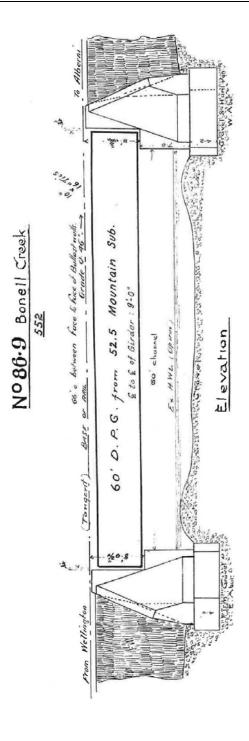
- Original construction year =1909
- Replaced steel span in 1976





86.90 - Victoria Subdivision - Bonell Creek

Bridge General Arrangement:







87.20 - Victoria Subdivision - Hamilton Creek





Interior Diaphragm View (Typical)



Corrosion of Bottom Flange Angle (Typical)





87.20 - Victoria Subdivision - Hamilton Creek

FEATURE CROSSED: Hamilton Creek

INSPECTION DATE: 10/24/2011 STREAM DEPTH: 2 ft. HEIGHT: 22 ft

NEAREST TOWN: Nanoose Bay, BC FLOW DIRECTION: East TOTAL LENGTH: 46 ft INSPECTORS: APW/AL DECK TYPE: Open SPANS: 43'-11" (DPG)

NO. OF SPANS: One WALKWAY: No
ACCESS METHOD: None HANDRAILS: No

NDT TESTING: No OBSERVED UNDER LOAD: No

Inspection Findings:

ABUTMENT/BACKWALL NOTES

Abutment Type: Cast-In-Place Concrete

- Some gravel and ballast on abutment seats
- · Moss growing on abutment seats
- · Minor efflorescence on face of abutment
- No significant defects noted

WINGWALL NOTES

Wingwall Type: Cast-In-Place Concrete

No significant defects noted

DECK NOTES

- Track located on a curved alignment (5 ½ degree curve per plans)
- Ties = 10" wide x 14" deep x 13-0" long at 16" centers (no dap in ties)
- Superelevation is taken in girders
- 10 poor ties counted; ties are generally in good condition

STEEL SPAN NOTES

Steel Notes:

- Web has a section loss of 1/16" for 2" up from vertical leg of bottom angle
- Bottom angle horizontal leg has a section loss of 1/16" for a length of 2" on the top surface
- No corrosion found on top flange or bearing stiffeners

History:

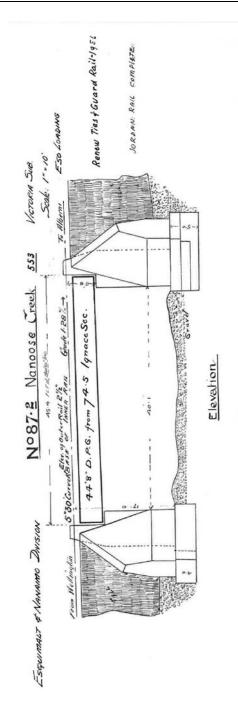
Original construction year = 1909





87.20 - Victoria Subdivision - Hamilton Creek

Bridge General Arrangement:











South Abutment Bearing



North Abutment Bearing





FEATURE CROSSED: Englishman River

INSPECTION DATE: 10/26/2011 STREAM DEPTH: 2 ft. HEIGHT: 80 ft

NEAREST TOWN: Parksville, BC FLOW DIRECTION: East TOTAL LENGTH: 335 ft

INSPECTORS: APW/AL DECK TYPE: Open SPANS: 103'-9" (DT), 128' (DT) & 103'-9" (DT)

NO. OF SPANS: Three WALKWAY: No (2 Refuge Bays)

ACCESS METHOD: Snooper HANDRAILS: No

NDT TESTING: No OBSERVED UNDER LOAD: No

Inspection Findings:

ABUTMENT/BACKWALL NOTES

Abutment Type: Cast-In-Place Concrete

- Moss and debris on abutment seats
- Both abutments are in good condition with no significant defects

WINGWALL NOTES

Wingwall Type: Cast-In-Place Concrete

- South wingwalls are leaning slightly inwards (less than 1" at top of wall)
- Both wingwalls are in good condition with no significant defects

PIER NOTES

Pier 1 Notes:

- Bearing seat is cracked under both bearings from Span 1
- Bearing seat is clear of debris and vegetation
- Efflorescence on pedestals and north side of pier

Pier 2 Notes:

- Bearing seat is clear of debris and vegetation
- There is a potential for scour on south side of pier base; no scour present at this time
- No significant defects noted

DECK NOTES

- · Track located on a tangent alignment
- Ties (Spans 1 & 3) = 10" wide x 14" deep x 12'-0" long (1" tie dap)
- Ties (Span 2) = 10" wide x 16" deep x 12'-0" long (2" tie dap)
- Tie spacing = 16"
- Poor tie count = 30 (Span 1), 27 (Span 2) and 42 (Span 3)
- Approximately 30% of ties counted as poor; ties are structural in nature and are bearing on top chord of truss
- Ties are generally in fair to poor condition





TRUSS SPAN 1 NOTES

Bearing Notes:

- Rocker bearings at south end of span
 - Moderate surface corrosion; anchor bolts are in good condition
 - Bearings appear to be frozen
- Roller bearings at north end of span
 - Minor surface corrosion; anchor bolts are leaning north approximately 1"
 - Bearings appear to be frozen

Primary Truss Member Notes:

- Top chord members are experiencing moderate corrosion and pitting
- · Bottom chord bottom plate is collecting water and debris
- Bottom chord members are experiencing moderate corrosion and pitting
- Diagonal members have been strengthened
- Diagonal members are experiencing minor surface corrosion and pitting

Secondary Truss Member Notes:

All secondary truss members are experiencing minor surface corrosion

TRUSS SPAN 2 NOTES

Bearing Notes:

- Roller bearings at south end of span
 - Minor surface corrosion on bearings; anchor bolts are in good condition
 - Bearings appear to be frozen
- Rocker bearings at north end of span
 - o Minor surface corrosion; anchor bolts are in good condition

Primary Truss Member Notes:

- Top chord members are experiencing surface corrosion
- Top and bottom chord members have bend in bottom flanges from installation (see attached photo)
- · Bottom chord members are pitted at several locations
- Diagonal members are experiencing minor surface corrosion

Secondary Truss Member Notes:

All secondary truss members are experiencing minor surface corrosion

TRUSS SPAN 3 NOTES

Bearing Notes:

- · Fixed rotational bearings at south end of span
 - No surface corrosion noted; anchor bolts are in good condition
- Roller bearings at north end of span
 - Bearings appear to be frozen; anchor bolts are in good condition
 - No surface corrosion





Primary Truss Member Notes:

- Top chord members are experiencing surface corrosion
- Bottom chord members have bend in bottom flanges from installation
- Bottom chord members are not experiencing surface corrosion
- Diagonal members are experiencing minor surface corrosion and pitting (see notes in Appendix B for details)

Secondary Truss Member Notes:

All secondary truss members are experiencing minor surface corrosion

History:

- Original construction year = 1909 (Span 2), 1923 (Spans 1 & 3)
- Spans strengthened in 1941

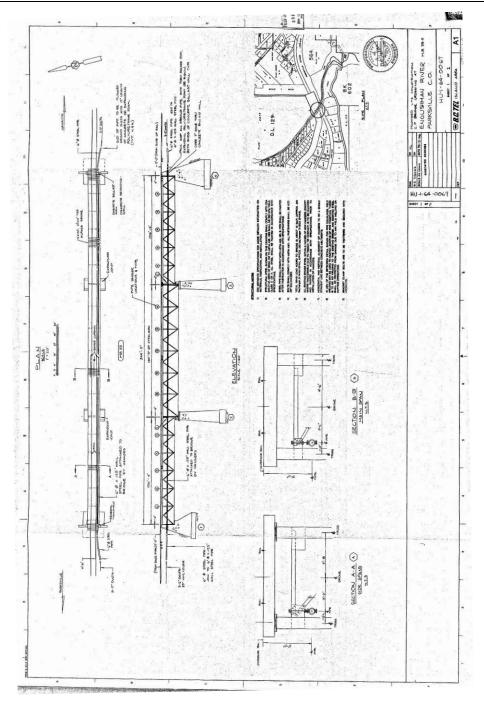
Noted Deficiencies:

Approximately 30% of ties counted as poor; ties are structural in nature and are bearing on top chord of truss





Bridge General Arrangement:







Additional Inspection Photos:



Corrosion on Bottom Flange of Bottom Chord



Bottom Chord Bottom Plate (Note Moss & Debris)



Bent Truss Flange from Installation Jacking



Corrosion on Secondary Bracing Members



Pier Bearing Pedestal (Pier 1)



Bowed Plate on Bottom Chord of Truss







Track View (Looking South)



Girder Span View (Looking North)



FEATURE CROSSED: French Creek

INSPECTION DATE: 11/01/2011 STREAM DEPTH: 2 ft HEIGHT: 92 ft

NEAREST TOWN: French Creek, BC FLOW DIRECTION: East TOTAL LENGTH: 1,063 ft

INSPECTORS: SCW/DBH DECK TYPE: Open SPANS: 40 @ 15' (TFT), 2 @ 45' (DPG),

NO. OF SPANS: 63 **WALKWAY:** No (Refuge Bays) 75' (DPG) & 20 @ 15' (TFT)

ACCESS METHOD: Snooper HANDRAILS: No

NDT TESTING: No OBSERVED UNDER LOAD: Yes

Inspection Findings:

TIMBER TRESTLE INSPECTION SUMMARY

- · All timber trestle members were visually inspected; only west face of the upper storey inspected with snooper
- Upper Storey:
 - Select exterior stringers were sounded; interior stringers were not sounded due to access
 - Ends of pile caps were sounded, interior were not sounded due to difficult access
 - o The tops of all exterior posts and bottoms of select exterior posts were sounded
 - The interior posts were not accessible and none were sounded
- · Middle Storey:
 - Exterior and interior posts and sills and bracing were not accessible and were not sounded
- Lower Storey:
 - All posts were sounded at the ground level, no exception noted
 - o Posts, caps and bracing were not sounded above the ground level

END BENT NOTES

South End Bent Type: Timber sill (14" wide x 13" deep) on concrete pedestal

- · Heavy brush around south end bent
- End bent is in good condition; no significant defects noted

North End Bent Type: Timber sill (14" wide x 13" deep) on concrete pedestal

· End bent is in good condition; no significant defects noted

WINGWALL/BACKWALL NOTES

Wingwall/Backwall Type: Timber

- All wingwalls and backwalls are overgrown by vegetation
- · Minor cracks noted in the wingwalls

DECK NOTES

- · Track located on a tangent alignment
- Ties (timber spans) = $7 \frac{1}{2}$ " wide x $7 \frac{1}{2}$ " deep x 10-0" long (12" spacing)
- Ties (deck plate girder spans) = 10" wide x 16" wide x 13'-0" long (16" spacing)
- Poor ties counted = 54 (south timber approaches), 6 (steel spans), 42 (north timber approaches)

TIMBER BENT NOTES

- All timber bent posts are bearing on concrete footings (five posts at cap; six posts at base)
- Exterior posts are connected to concrete footing with bolted angles





- Most concrete footings are covered in vegetation and/or moss
- Decay/degradation has been noted in the following posts (see attached photo)
 - Bent 4, Post 1 has a 6" deep check
 - Bent 7, Post 1 has a check
 - Bent 12, Post 1 has a 5" deep check on south face
 - Bent 19 has a split in tower brace
 - o Bent 19, Post 1 has a check on west face
 - Bent 30, Post 1 has a split midway through post
 - Bent 34, Post 1 has a split in the upper storey
 - o Bent 48, Post 5 appears creosote has leached out
 - Bent 54, Post 5 has a check on the east face in the middle storey
 - Bent 55, Post 1 has a crack on the west face at the base
- Some posts are not bearing fully on bent cap
- Bent caps 22, 38 & 39 are split (see attached photo)

STEEL TOWER BENT NOTES

General:

- Towers (double bents) are in fair condition
- · Bottom horizontal struts have moderate corrosion
- Paint peeling

Tower 1:

- Trees growing through base of tower (see attached photo)
- NW base plate is corroded
- SW and SE top column plates are pitting around bearing plates
- · Anchor bolts corroded at NW top column plate
- Bottom flange pitted on bottom leg 4' from base at north end of Span 1

Tower 2 (see Appendix B sketches for more details):

- Top column plates at all locations are corroding and pitting
- · Rust accumulating near anchor bolts
- NW column corroded above the base plate
- · Bottom strut on north and west face corroded
- NE/NW bearings corroded

TIMBER SPAN NOTES

Timber Stringer Notes:

Stringer Type: Two 4-ply stringers (each ply is 9" wide x 17" deep)

- Stringers are generally in good condition
- Decay/degradation has been noted in the following posts
 - o Span 9, Stringer 1 has a 2" check
 - o Span 13, Stringer 1 has a shake at south end
 - Span 20, Stringer 5 has section loss on bottom 2" at Bent 21
 - Span 26, Stringer 5 has split on bottom
 - Span 27, Stringer 5 has loss of 2" x 2" on bottom face
 - o Span 30, Stringer 5 has split on west face at mid-height
 - Spans 32 & 33, Stringer 2 has a bottom split
 - Span 33, Stringer 3 has a bottom spilt
 - Span 41, Stringer 1 has a gash at midspan on the bottom (likely from erection)
 - Span 46/47, Stringer 1 has a 2" deep check





- Car fire in 2010 between Bents 16 and 20 has added minor surface charring to stringers/caps
- · Ties changed out near Bents 19 to 20

Extra Timber Member Notes:

- Broken cross brace member between Bents 26 and 27, near bottom on west side
- Broken cross brace member between Bents 27 and 28 on 3rd storey on west

STEEL SPAN NOTES

Span1 Notes:

- West Girder
 - Minor surface corrosion
- East Girder
 - Minor surface corrosion
 - Minor pitting of vertical leg of bottom angle (inside and outside)
 - o Paint peeling from web

Span2 Notes:

- West Girder
 - Minor surface corrosion
- East Girder
 - Minor surface corrosion

Span3 Notes:

- West Girder
 - Minor surface corrosion
- East Girder
 - Minor surface corrosion
 - Pitting on inside of vertical leg of bottom flange angle
 - Slight corrosion of lateral bracing system (10% loss of lateral plates)

REFUGE BAY NOTES

Timber floor board missing from refuge bay on west side of track; second from north end (see attached photo)

OBSERVATIONS UNDER LOAD

- Steel bases were observed; no more than 1/32" to 1/16" pumping noted
- · Timber bases were observed; no visible movement
- Ties bending as expected
- Minor dip in track near south end

History:

• Original construction year = 1913 (Deck Plate Girders), 1977 (South and North Timber Approaches)

Noted Deficiencies:

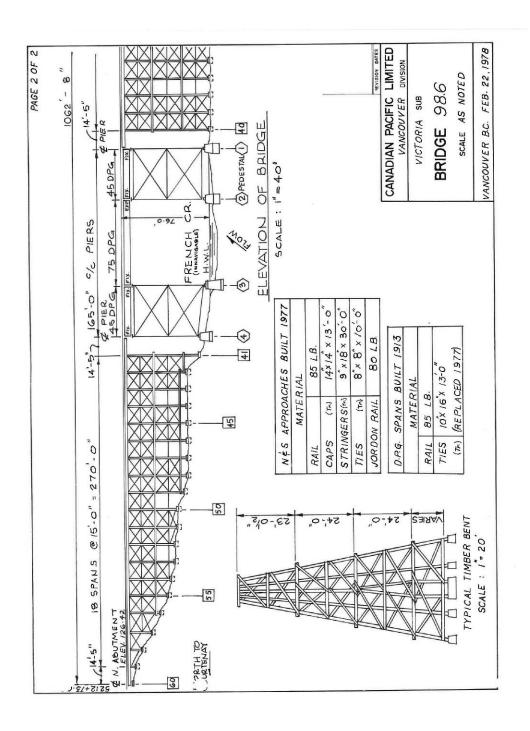
• Timber floor board missing from refuge bay on west side of track; second from north end (safety concern)

Note: While no individual timber elements have been identified as "Noted Deficiencies", many timber members could not be inspected in detail due to time and access limitations





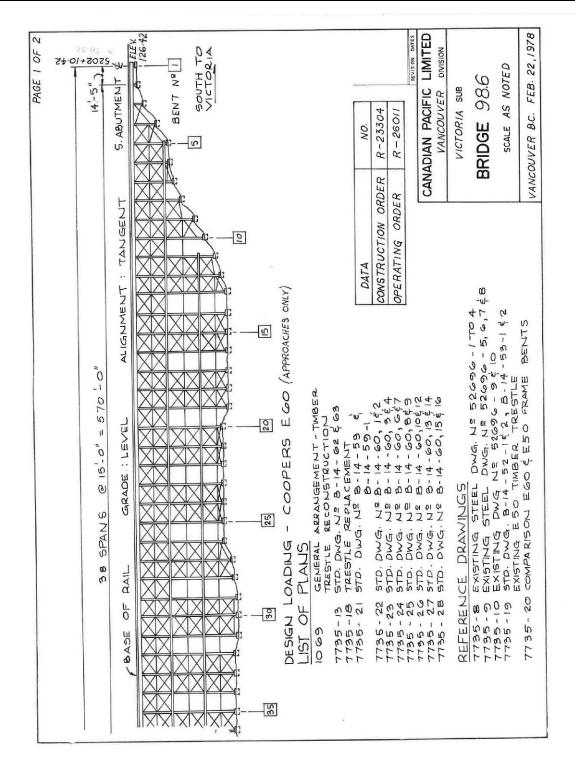
Bridge General Arrangement (1 of 2):







Bridge General Arrangement (2 of 2):







98.60 - Victoria Subdivision - French Creek

Additional Inspection Photos:



Split Base of Intermediate Timber Bent



Missing Floor Board in Refuge Bay



Split Stringer (Several Similar Locations)



Trees Growing at Base of Tower 1



Split Timber Bent Cap









Typical Bearing at Steel Tower



Tower Base at River





FEATURE CROSSED: Little Qualicum River

INSPECTION DATE: 10/28/2011 STREAM DEPTH: 4 ft HEIGHT: 132 ft

NEAREST TOWN: Qualicum Beach, BC FLOW DIRECTION: East TOTAL LENGTH: 450 ft

NO. OF SPANS: Seven WALKWAY: No (two refuge bays) 2 @ 45' (DPG)

ACCESS METHOD: Snooper HANDRAILS: No

NDT TESTING: No OBSERVED UNDER LOAD: No

Inspection Findings:

ABUTMENT/BACKWALL NOTES

Abutment Type: Cast-In-Place Concrete

- · Moss and debris on abutment seat
- No significant defects noted

WINGWALL NOTES

Wingwall Type: Cast-In-Place Concrete

· No significant defects noted

STEEL TOWER NOTES:

- Steel towers 1 & 4 are single tower bents; towers 2 & 3 are double tower bents
- · Minor surface corrosion on steel members; pitting at bearing locations
- Towers are generally in fair condition
- Base of towers could be susceptible to scour

DECK NOTES

- Track located on a tangent alignment
- Ties = 10" wide x 16" deep x 13'-0" long
- Tie spacing = 16"
- Approximately 99 poor ties counted; in general the ties are in fair condition
- Both approaches are low and a few of the approach ties are rotted

SPAN NOTES

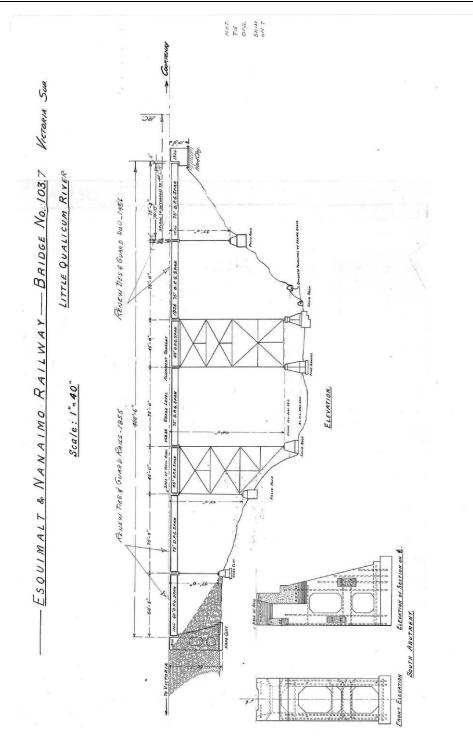
- All spans exhibit minor surface corrosion on all steel faces
- In general, steel is in good condition
- · Localized areas of minor section loss occur
- Bearings have moderate corrosion

History:

Original construction year = 1913 (Spans 3, 4 & 5); 1926 (Spans 1, 2, 6 & 7)















Steel Tower in River





FEATURE CROSSED: Big Qualicum River

INSPECTION DATE: 10/28/2011 STREAM DEPTH: 4 ft HEIGHT: 97 ft

NEAREST TOWN: Qualicum Beach, BC FLOW DIRECTION: East TOTAL LENGTH: 316 ft

NO. OF SPANS: Five WALKWAY: No (2 Refuge Bays)

ACCESS METHOD: Snooper HANDRAILS: No

NDT TESTING: No OBSERVED UNDER LOAD: No

Inspection Findings:

ABUTMENT/BACKWALL NOTES

Abutment Type: Cast-In-Place Concrete

- · Moss and debris on abutment seats
- Both abutments are in good condition with no significant defects

WINGWALL NOTES

Wingwall Type: Cast-In-Place Concrete

Both wingwalls are in good condition with no significant defects

STEEL TOWER NOTES

- Both towers are double bent towers
- · Minor surface corrosion over entire face of towers
- Localized areas of pitting at bracing points at top and bottom of towers
- Footings not inspected for scour due to water level

DECK NOTES

- · Track located on a curved alignment
- Ties = 10" wide x 16" deep x 13'-0" long (ties are dapped on the east side)
- Poor tie count = 42
- Overall ties are in good condition
- Timber boards under the ties are rotten and crushing (see attached photo)
 - Timber boards at Span 3 are severely deteriorated
 - o Timber boards at Spans 1, 2, 4 and 5 are beginning to deteriorate

SPAN NOTES

- Web plates exhibit minor surface corrosion throughout
- · Top and bottom flange angles have localized areas of minor section loss
- Bottom flange angles and gusset plates are covered in debris at localized areas
- Lateral gusset plates have minor to moderate pitting
- Stiffeners are pitted at some locations
- Bearings exhibit surface corrosion (see attached photo)

WALKWAY NOTES

· Refuge bays are in poor condition





History:

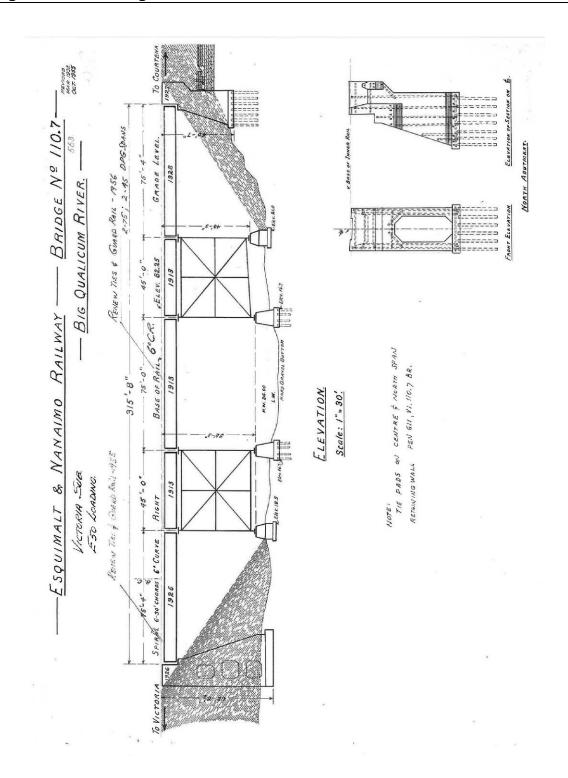
• Original construction year = 1913 (Spans 2, 3 & 4); 1926 (Span 1); 1928 (Span 5)

Noted Deficiencies:

- Timber boards under the ties of Span 3 are severely deteriorated
- Refuge bays are in poor condition (safety concern)











Additional Inspection Photos:



Crushed Timber beneath Ties



Debris on Bottom Flange Angles (Typical)



Surface Corrosion on Bearings









Track View



FEATURE CROSSED: Nile Creek

INSPECTION DATE: 10/27/2011 STREAM DEPTH: 3 ft. HEIGHT: 55 ft

NEAREST TOWN: Bowser, BC FLOW DIRECTION: East TOTAL LENGTH: 167 ft

INSPECTORS: APW/AL DECK TYPE: Open SPANS: 55' (DPG), 60' (DPG) & 51' (DPG)

NO. OF SPANS: Three WALKWAY: No (1 Refuge Bay)

ACCESS METHOD: Snooper HANDRAILS: No

NDT TESTING: No OBSERVED UNDER LOAD: No

Inspection Findings:

ABUTMENT/BACKWALL NOTES

Abutment Type: Cast-In-Place Concrete

- Moss and debris on abutment seats
- Both abutments are in good condition with no significant defects

WINGWALL NOTES

Wingwall Type: Cast-In-Place Concrete

Both wingwalls are in good condition with no significant defects

PIER NOTES

- Base of Pier 1 is susceptible to scour; appears to be in good condition currently
- Pier 1 is cracking on west side near the top
- Pier 1 has a spall on the SW corner (1 ½ ft x 6 in across)
- Pier 2 has a construction joint with efflorescence on the south side

DECK NOTES

- Track located on a tangent alignment
- Ties = 10" wide x 16" deep x 13'-0" long
- Tie Spacing = 16"
- Poor tie count = 11 (Span 1), 14 (Span 2) & 8 (Span 3)
- · Overall ties are in good condition

SPAN NOTES

- · Surface corrosion on all faces of steel
- · Minor section loss on bottom angles
- · Corrosion of bearings
- Lateral bracing angles are bent near bearings from jacking (see attached photo)

WALKWAY NOTES

- Refuge bays are in poor condition
 - One plank and one handrail are missing
 - Posts are loose





History:

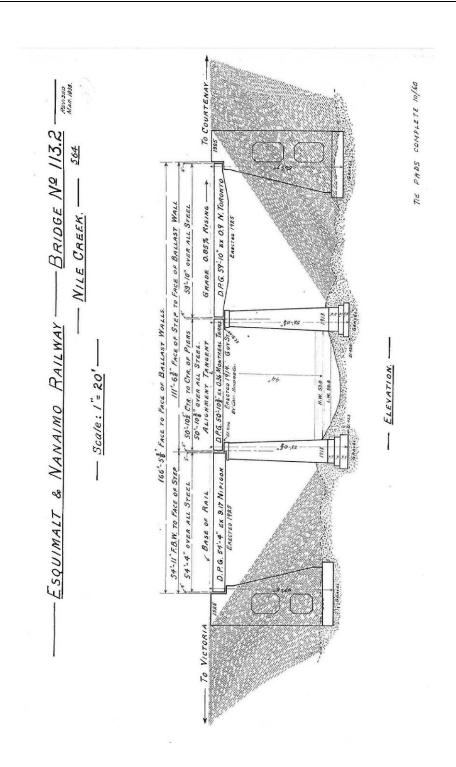
• Original construction year = 1914 (Span 2); 1925 (Spans 1 & 3)

Noted Deficiencies:

- Refuge bays are in poor condition (safety concern)
 - One plank and one handrail are missing
 - Posts are loose











Additional Inspection Photos:



View of Abutment (Typical)



Bent Bottom Lateral Angle



Girder with Varying Section





119.20 - Victoria Subdivision - Cook Creek S Fork





Corrosion of Bottom Flange Angle (Typical)



Bridge Under View (Typical)





119.20 - Victoria Subdivision - Cook Creek S Fork

FEATURE CROSSED: Cook Creek (South Fork)

INSPECTION DATE: 10/24/2011 STREAM DEPTH: 3 ft. HEIGHT: 14 ft

NEAREST TOWN: Mud Bay, BC FLOW DIRECTION: East TOTAL LENGTH: 31 ft
INSPECTORS: APW/AL DECK TYPE: Open SPANS: 28'-7" (DPG)

NO. OF SPANS: One WALKWAY: No
ACCESS METHOD: None HANDRAILS: No

NDT TESTING: No OBSERVED UNDER LOAD: No

Inspection Findings:

ABUTMENT/BACKWALL NOTES

Abutment Type: Cast-In-Place Concrete

- Rip rap has been placed in front of abutments
- · Moss and ferns are growing on abutment seats
- · No significant defects noted

WINGWALL NOTES

Wingwall Type: Cast-In-Place Concrete

• Wingwalls are in good condition; no significant defects noted

DECK NOTES

- Track located on a tangent alignment
- Ties = 10" wide x 14" deep x 13'-0" long
- Tie spacing = 16"
- Poor ties counted = 6
- Both approaches are low

SPAN NOTES

- Minor surface corrosion on face of girders
- Minor section loss of top flange plate at midspan (1/16")

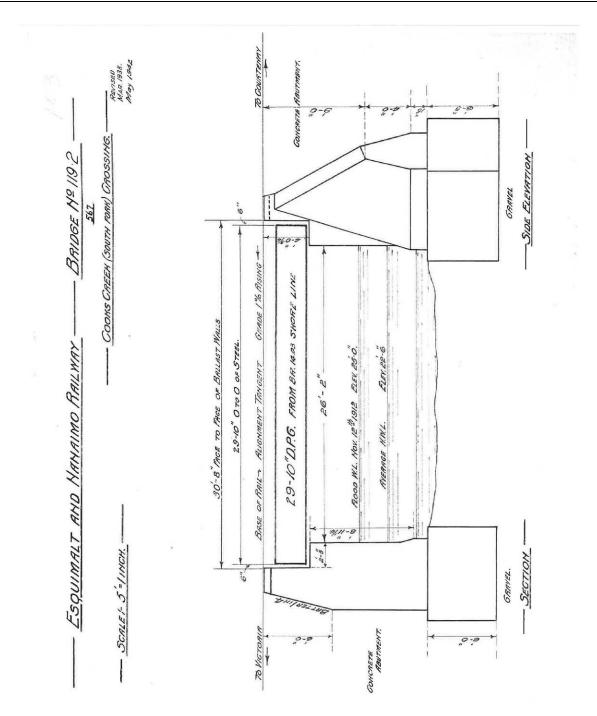
History:

Original construction year = 1914





119.20 - Victoria Subdivision - Cook Creek S Fork







119.50 - Victoria Subdivision - Cook Creek N Fork





Bridge Underside View





119.50 - Victoria Subdivision - Cook Creek N Fork

FEATURE CROSSED: Cook Creek (North Fork)

INSPECTION DATE: 10/24/2011 STREAM DEPTH: 1 ft HEIGHT: 13 ft

NEAREST TOWN: Mud Bay, BC FLOW DIRECTION: East TOTAL LENGTH: 30 ft
INSPECTORS: APW/AL DECK TYPE: Open SPANS: 24'-0" (TFT)

NO. OF SPANS: One WALKWAY: No
ACCESS METHOD: None HANDRAILS: No

NDT TESTING: No OBSERVED UNDER LOAD: No

Inspection Findings:

ABUTMENT/BACKWALL NOTES

Abutment Type: Cast-In-Place Concrete

· Abutments are in good condition; no defects noted

WINGWALL NOTES

Wingwall Type: Cast-In-Place Concrete

- South wingwall is being undermined
- Wingwalls are in good condition

DECK NOTES

- · Track located on a tangent alignment
- Ties = 8" wide x 8" deep x 12'-0" long
- Tie spacing = 12"
- Poor ties counted = 12
- · South approach is low

SPAN NOTES

- Two sets of four timber stringers (14 ½" wide x 25 ¼" deep)
- · Stringers are in good condition
- · Minor splits in stringers

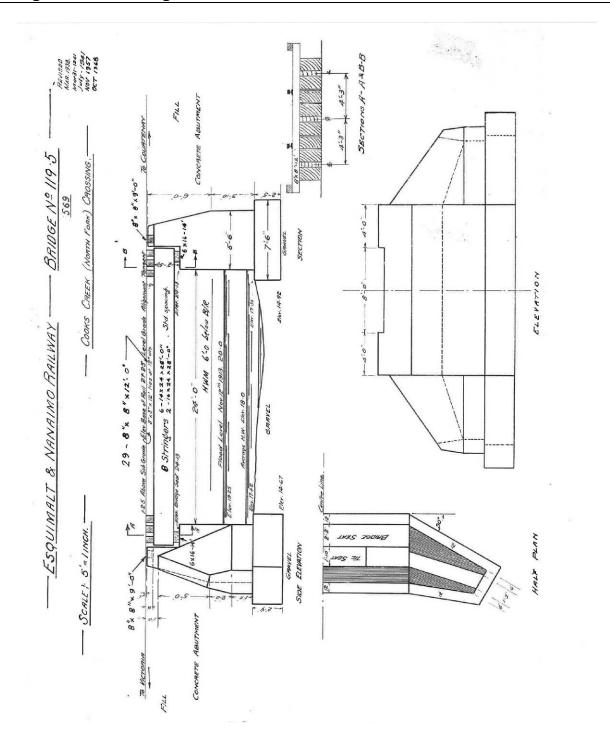
History:

Original construction year = 1965





119.50 - Victoria Subdivision - Cook Creek N Fork







120.20 - Victoria Subdivision - Rosewell Creek





Underside Bridge View





120.20 – Victoria Subdivision – Rosewell Creek

FEATURE CROSSED: Rosewell Creek

INSPECTION DATE: 10/24/2011 STREAM DEPTH: 6 ft HEIGHT: 25 ft

NEAREST TOWN: Mud Bay, BC FLOW DIRECTION: East TOTAL LENGTH: 71 ft
INSPECTORS: APW/AL DECK TYPE: Open SPANS: 67'-8" (HDPG)

NO. OF SPANS: One WALKWAY: No
ACCESS METHOD: None HANDRAILS: No

NDT TESTING: No OBSERVED UNDER LOAD: No

Inspection Findings:

ABUTMENT/BACKWALL NOTES

Abutment Type: Cast-In-Place Concrete

- · Rip rap placed around south abutment
- · Minor ballast accumulation on abutment seats
- · Moss growing on abutments

WINGWALL NOTES

Wingwall Type: Cast-In-Place Concrete

· Wingwalls are in good condition; no significant defects noted

DECK NOTES

- Bridge is located on a tangent alignment
- Ties = 10" wide x 16" deep x 13'-0" long (no dap)
- Tie spacing = 14"
- 18 poor ties counted; ties are generally in fair condition
- Ties have a 4" wide bearing length on the support angles

SPAN NOTES

Bearing Notes:

- Rocker bearing (fixed) at south abutment; roller bearing (expansion) at north abutment
- Moderate corrosion on both bearings; 1/16" pitting on bearing plates (see attached photo)
- Anchor bolt at SE bearing is bent slightly

Stringer Notes:

- Minor surface corrosion on web and top flange angles
- Bottom flange angles have section loss
- Gusset plates for lateral bracing system are pitted at ends of span (1/8")
- Snow plow has hit south end of west girder; end plate is damaged

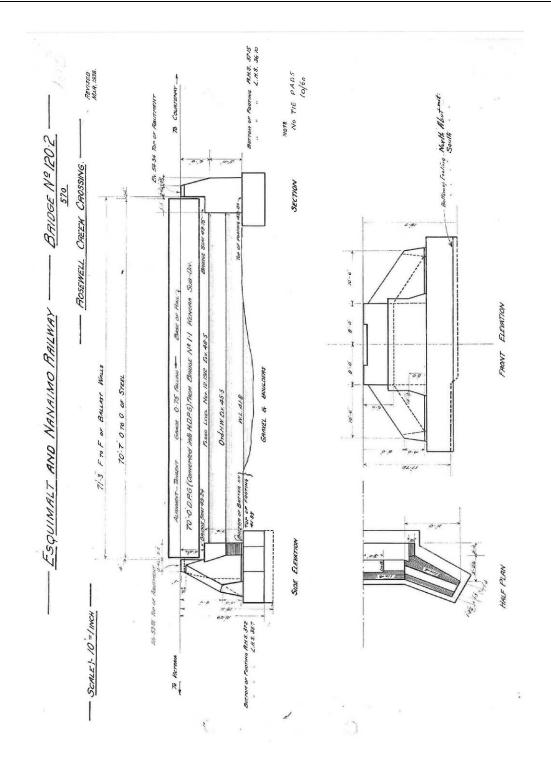
History:

Original construction year =1914





120.20 - Victoria Subdivision - Rosewell Creek







120.20 - Victoria Subdivision - Rosewell Creek

Additional Inspection Photos:



Bearing at North Abutment





Corroded South Bearing (Typical)











Abutment View



FEATURE CROSSED: Waterloo Creek

INSPECTION DATE: 10/25/2011 STREAM DEPTH: 3 ft HEIGHT: 16 ft

NEAREST TOWN: Mud Bay, BC FLOW DIRECTION: East TOTAL LENGTH: 66 ft
INSPECTORS: APW/AL DECK TYPE: Open SPANS: 64' (HDPG)

NO. OF SPANS: One WALKWAY: No
ACCESS METHOD: None HANDRAILS: No

NDT TESTING: No OBSERVED UNDER LOAD: No

Inspection Findings:

ABUTMENT/BACKWALL NOTES

Abutment Type: Cast-In-Place Concrete

- South abutment is being undermined (see attached photo)
- North abutment is in good condition
- Moss growing on both abutments

WINGWALL NOTES

Wingwall Type: Cast-In-Place Concrete

- South wingwalls are being undermined similar to the abutment
- North wingwalls are in good condition

DECK NOTES

- · Bridge is located on a tangent alignment
- Ties = 10" wide x 16" deep x 13'-0" long (no dap)
- 4 poor ties counted; ties are generally in good condition
- Both approaches are low

SPAN NOTES

Bearing Notes:

- Steel plate bearings (expansion) at south abutment; rotational bearing (fixed) at north abutment
- No corrosion noted on bearings
- Expansion bearings appear to be frozen

Stringer Notes:

- Minor surface corrosion on all girder surfaces
- Lateral bracing system is corroding with moderate section loss (see attached photo)
- Gusset plates in bracing system are severely corroded; some gusset plates have holes

History:

• Original construction year =1928 (abutments) & 1930 (steel)



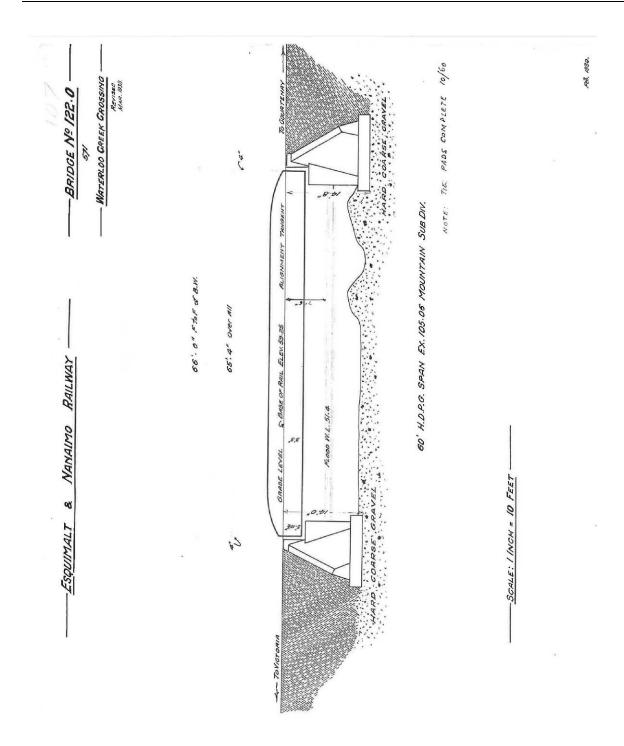


Noted Deficiencies:

• South abutment is being undermined (further investigation necessary)











Additional Inspection Photos:



Close-Up View of Undermined South Abutment



Corroded Lateral Bracing Members













Pier View





FEATURE CROSSED: Coal Creek

INSPECTION DATE: 10/27/2011 STREAM DEPTH: 3 ft HEIGHT: 35 ft

NEAREST TOWN: Mud Bay, BC FLOW DIRECTION: East TOTAL LENGTH: 118 ft

INSPECTORS: APW/AL DECK TYPE: Open SPANS: 30'-3" (DPG), 48'-10" (DPG) &

NO. OF SPANS: Three WALKWAY: No 33'-3" (DPG)

ACCESS METHOD: None HANDRAILS: No

NDT TESTING: No OBSERVED UNDER LOAD: No

Inspection Findings:

ABUTMENT/BACKWALL NOTES

Abutment Type: Cast-In-Place Concrete

- Moss and leaves on abutment seats
- Efflorescence at construction joint on abutment face
- Both abutments are in good condition; no significant defects noted

WINGWALL NOTES

Wingwall Type: Cast-In-Place Concrete

• Both wingwalls are in good condition; no significant defects noted

PIER NOTES

Pier Type: Cast-In-Place Concrete

Pier 1 Notes:

- · Expansion bearings at this pier
- Undermining at north side of pier (rip rap has been placed at this location)
- Spalling on west face of cap and northeast corner of pier (see attached photo)

Pier 2 Notes:

- Fixed bearings at this pier
- Undermining at base of pier (see attached photo)

DECK NOTES

- Bridge is located on a tangent alignment
- Ties (Spans 1 & 3) = 10" wide x 16" deep x 12'-0" long (no dap)
- Ties (Span 2) = 10" wide x 12" deep x 12'-0" long (no dap)
- Tie Spacing = 16"
- Poor ties counted = 5 (Span 1), 16 (Span 2) & 8 (Span 3); ties are generally in good condition
- Both approaches are low

SPAN NOTES

Bearing Notes:

• Bearings are moderately corroded; expansion bearings appear frozen





Span 1 Notes:

- Minor surface corrosion on all steel surfaces
- Steel is in good condition; no significant defects noted

Span 2 Notes:

- Minor surface corrosion on all steel surfaces
- Gusset plates in bracing system are pitted (approximately 1/16")

Span 3 Notes:

- Minor surface corrosion on all steel surfaces
- Steel is in good condition; no significant defects noted

History:

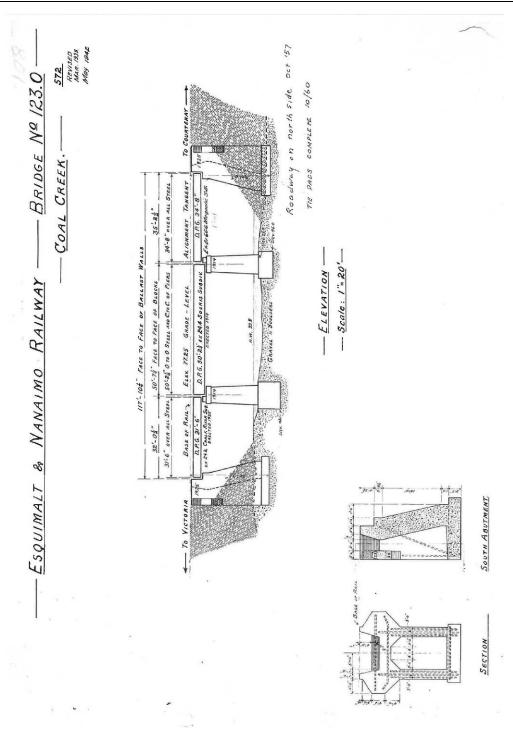
• Original construction year =1914

Noted Deficiencies:

Undermining at base of Pier 2 (further investigation necessary)











Additional Inspection Photos:



Spall on NE corner of Pier 2



Pier 2 Undermining









Track View



Girder View (Deck Plate Girder Span)



FEATURE CROSSED: Mill Creek

INSPECTION DATE: 10/25/2011 STREAM DEPTH: 2 ft HEIGHT: 40 ft

NEAREST TOWN: Mud Bay, BC FLOW DIRECTION: East TOTAL LENGTH: 173 ft

INSPECTORS: APW/AL DECK TYPE: Open SPANS: 65'-4" (DPG), 106'-4" (DT)

NO. OF SPANS: Two WALKWAY: No
ACCESS METHOD: None HANDRAILS: No

NDT TESTING: No OBSERVED UNDER LOAD: No

Inspection Findings:

ABUTMENT/BACKWALL NOTES

Abutment Type: Cast-In-Place Concrete

- Minor debris around bearings
- Minor spalling at corners of north abutment seat (see attached photo)

WINGWALL NOTES

Wingwall Type: Cast-In-Place Concrete

Minor spalling along construction joints in the wingwalls

PIER NOTES

Pier Type: Cast-In-Place Concrete

- Crack in pedestal of Span 1
- · Pier in good condition

DECK NOTES

- Bridge is located on a tangent alignment
- Ties (Span 1) = 10" wide x 14" deep x 12'-0" long (no dap)
- Ties (Span 2) = 10" wide x 14" deep x 13'-0" long (no dap)
- Tie Spacing = 16"
- Poor ties counted = 12
- · Both approaches are low

SPAN NOTES

Bearing Notes:

Bearings are moderately corroded; expansion bearings appear frozen (see attached photo)

Span 1 Notes:

Span Type: Deck Plate Girder

- Minor surface corrosion on all steel surfaces
- Gusset plates in bracing system are pitted (approximately 1/16")





124.10 - Victoria Subdivision - Mill Creek

Span 2 Notes:

Span Type: Deck Truss

- Top Chord Members
 - Minor surface corrosion
 - o Members have been strengthened plates have stitch welds
 - Flanges are bent near abutment from jacking damage
- Bottom Chord Members
 - Minor surface corrosion
 - o Members have been strengthened plates have stitch welds
 - Flanges are bent near abutment from jacking damage
- Diagonal Members
 - Members have been strengthened plates have stitch welds
 - o No significant defects noted
- · Bracing Members
 - Minor pitting on some of the bottom gusset plates
 - Secondary members have minor surface corrosion

History:

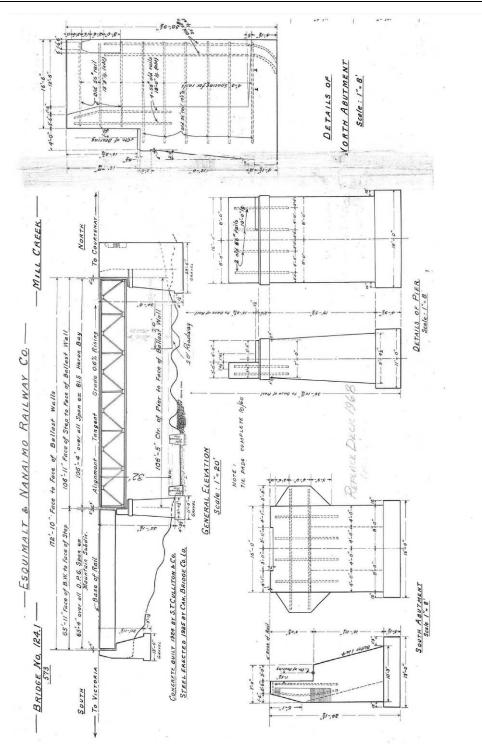
• Original construction year =1925





124.10 - Victoria Subdivision - Mill Creek

Bridge General Arrangement:







124.10 - Victoria Subdivision - Mill Creek

Additional Inspection Photos:



Corrosion on Bearing (Typical)



North Abutment Spalling













Side View (DPG & Deck Truss)



FEATURE CROSSED: Tsable River

INSPECTION DATE: 10/30/2011 STREAM DEPTH: 2 ft HEIGHT: 75 ft

NEAREST TOWN: Buckley Bay, BC FLOW DIRECTION: East TOTAL LENGTH: 603 ft

NO. OF SPANS: Twenty-Three WALKWAY: No (8 Refuge Bays) 100'-8" (DPG)

ACCESS METHOD: Snooper HANDRAILS: No

NDT TESTING: Yes OBSERVED UNDER LOAD: Yes

Inspection Findings:

TIMBER TRESTLE INSPECTION SUMMARY

- All timber trestle members were visually inspected; east and west face of upper storey inspected with snooper
- Upper Storey:
 - o Select exterior stringers were sounded; interior stringers were not sounded due to access
 - o Ends of pile caps were sounded, interior were not sounded due to difficult access
 - The tops of all exterior posts and bottoms of select exterior posts were sounded
 - The interior posts were not accessible and none were sounded
- Middle Storey:
 - o Exterior and interior posts and sills and bracing were not accessible and were not sounded
- Lower Storey:
 - o All posts were sounded at the ground level, no exceptions taken
 - Posts, caps and bracing were not sounded above the ground level

SOUTH END BENT NOTES

End Bent Type: Concrete Abutment with a Timber Bent Cap

- Surface of concrete abutment is weathering
- End bent is generally in good condition

NORTH ABUTMENT NOTES

Abutment Type: Cast-In-Place Concrete

Concrete abutment is in good condition

WINGWALL NOTES

Wingwall Type: Timber (South Abutment); Concrete (North Abutment)

- Timber wingwalls are not leaning and are in good condition
- Concrete wingwalls are leaning approximately 1" at top of walls

INTERMEDIATE TIMBER BENT NOTES

Intermediate Bent: Five square timber posts with a timber cap (14" wide x 14" deep)

- Intermediate bents are in fair condition except as noted below:
 - Bent 7: Base of Post 1 beginning to decay
 - Bent 12: Post 1 has approximately 50% section loss
 - Bent 13: Post 1 has heavy decay at base of first story from top (1 5/8" shell)





- o Bent 14: Post 1 has a rotten core (2" sound shell)
- Bent 14: Post 4 top of post is poorly cut creating a bearing gap (typical throughout)
- o Bent 15: Post 1 deteriorated (approximately 30% section loss)
- Bent 16: Post 1 (4' from base) showing signs of decay
- Bent 22: Cross brace is split on east side, one story down from top
- Bent 23: Post 2 intermediate cap dapped slightly for post; Post 3 rotated on intermediate cap
- o Bent 23: Fracture cross bracing one level down from top
- Bent 24: Post 1 twisted

PIER NOTES

Pier Type: Cast-In-Place Concrete

- Pier 1
 - o Moss located on pier seat
 - Minor spalling at SW and SE corners of pier cap
 - o Minor spall on south face of pier, 10' above ground
- Pier 2
 - o Moss located on pier seat

DECK NOTES

- · Bridge is located on a tangent alignment
- Ties (Trestle Spans) = 8" wide x 8" deep x 10'-0" long (no dap)
- Ties (Deck Truss Spans) = 10" wide x 10" deep x 12'-0" long (no dap)
- Ties (Deck Plate Girder Span) = 10" wide x 16" deep x 12'-0" long (no dap)
- Tie Spacing = 16"
- Poor ties counted = 14 (Deck Truss Span), 2 (DPG Span)
- · Ties are generally in good condition

SPAN NOTES

Timber Stringer (Spans 1 through 21)

• Timber stringers are in good condition; no significant defects noted

Deck Truss (Span 22)

- Bearings
 - South bearings fixed
 - North bearings are roller bearings; expansion (appear to be frozen)
 - Surface corrosion and minor pitting on bearing plates
- Top Chord Members
 - Top plate of top chord has 3/16" to 1/4" pitting (see attached photo)
 - Bent lacing members at U1 (East)
- Bottom Chord Members
 - o No section loss noted
 - Minor surface corrosion at L1 (West)
 - o Bottom chord pin at L1 (West) has minor surface corrosion
- Diagonal Members
 - o Surface corrosion on diagonals, typical
 - Cracked eye members at L4 (West)
- Post Members
 - Surface corrosion, typical





- Floor Beam Members
 - Floor beams have strengthening plates welded on
 - Floor beams located at U1 and U2 have bent bottom flange cover plates
- Stringer Members
 - Surface corrosion throughout; bottom flanges have 1/16" section across entire width
- Bracing Members
 - Surface corrosion on all bracing members
 - Several rods of bottom lateral system are loose
 - One cotter pin missing in top lateral bracing

Deck Plate Girder (Span 23)

- Bearings
 - South bearings are fixed (good condition)
 - North bearings are rocker bearings; expansion (good condition)
- Steel Tower Bent
 - Located at south end of DPG span (in good condition)
- Steel
 - Generally steel is in good condition; paint peeling
 - o Gusset plates in bottom lateral bracing have 1/8" pitting (full width)
 - Horizontal stiffener has section loss (1/16" x 12", full width)

OBSERVATIONS UNDER LOAD

- No significant deflection noted in timber trestle substructure, timber superstructure/ties deflect as expected
- Only movement noted in truss span in diagonals at center of span (vibration), greater with increased speed

Non-Destructive Testing:

- Non-destructive testing was performed on October 19 of 2011; for photos and more details see Appendix A
- Pins (8 total) were tested ultrasonically
 - All pins tested were found to be acceptable
 - Heavy corrosion was observed on pins
- Several components (12 total) were magnetic particle tested
 - Components consisted of eyebars, diagonals and turnbuckles
 - o Inherent defects were noted visually and confirmed with testing at end of one diagonal
 - Inherent defects were noted visually and confirmed with testing at end of one eyebar
 - o A crack was found in the turnbuckle of one of the Queen Post trusses
 - Remaining components tested were found to be acceptable

History:

Original construction year =1914 (Deck Truss), 1977 (Deck Plate Girder and Timber Trestle replaced)

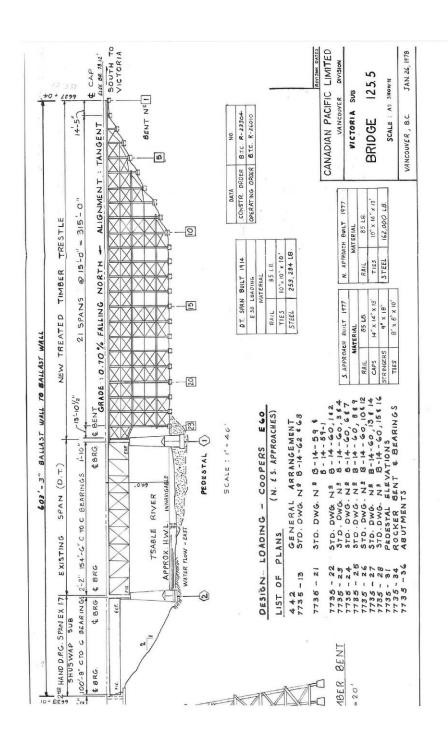
Noted Deficiencies:

- Heavy corrosion was found on pins during NDT testing
- Cracks were found in one diagonal member, one eye bar member and a turnbuckle in a Queen Post truss Note: Many timber elements could not be inspected in detail due to time and access limitations. Of the timber members inspected in detail, several in the intermediate trestle bents were identified as having significant deterioration.





Bridge General Arrangement:







Additional Inspection Photos:



Timber Trestle View (Looking North)



Top Plate of Top Chord Pitting (Deck Truss Span)



South End Bent View



Deck Truss Side View (Looking North)





126.15 - Victoria Subdivision - Buckley Bay Road





Track View (Looking North)





126.15 - Victoria Subdivision - Buckley Bay Road

FEATURE CROSSED: Buckley Bay Road

INSPECTION DATE: 10/25/2011 STREAM DEPTH: N/A HEIGHT: 22 ft

NEAREST TOWN: Buckley Bay, BC FLOW DIRECTION: N/A TOTAL LENGTH: 65 ft
INSPECTORS: APW/AL DECK TYPE: Ballast SPANS: 32'-1" (TPG)

NO. OF SPANS: One WALKWAY: Yes

ACCESS METHOD: None HANDRAILS: Yes

NDT TESTING: No OBSERVED UNDER LOAD: No

Inspection Findings:

ABUTMENT/BACKWALL NOTES

Abutment Type: Cast-In-Place Concrete

· Abutments are in good condition; no significant defects noted

WINGWALL NOTES

Wingwall Type: Cast-In-Place Concrete

· Wingwalls are in good condition; no significant defects noted

DECK NOTES

- · Bridge is located on a tangent alignment
- Ties = 9" wide x 6" deep x 8'-0" long (no dap)
- Tie Spacing = 22"
- Poor ties counted = 0 (ties are in good condition)

SPAN NOTES

Bearing Notes:

- Bearings are spherical type
- · Bearing are in good condition and functioning properly

Steel Notes

- · Surface corrosion on all steel surfaces
- No significant defects noted

WALKWAY NOTES

Walkways on both sides are new and in good condition

History:

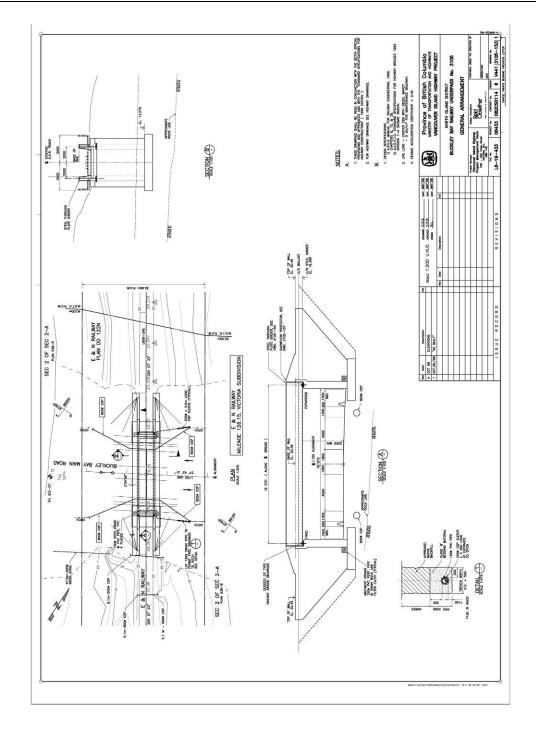
Original construction year =1998





126.15 – Victoria Subdivision – Buckley Bay Road

Bridge General Arrangement:







126.15 - Victoria Subdivision - Buckley Bay Road

Additional Inspection Photos:



Surface Corrosion (Typical)









Track View





FEATURE CROSSED: Hindoo Creek

INSPECTION DATE: 10/25/2011 STREAM DEPTH: 0.5 ft HEIGHT: 25 ft

NEAREST TOWN: Buckley Bay, BC FLOW DIRECTION: East TOTAL LENGTH: 21 ft
INSPECTORS: APW/AL DECK TYPE: Open SPANS: 19'-6" (TFT)

NO. OF SPANS: One WALKWAY: No
ACCESS METHOD: None HANDRAILS: No

NDT TESTING: No OBSERVED UNDER LOAD: No

Inspection Findings:

ABUTMENT/BACKWALL NOTES

Abutment Type: Cast-In-Place Concrete

- Concrete abutments are in good condition
- · Moisture and moss on seat and face of abutments
- Apron in front of abutments drops off approximately 6 feet due to scour (monitor)

WINGWALL NOTES

Wingwall Type: Cast-In-Place Concrete

Wingwalls are in good condition; no significant defects noted

DECK NOTES

- Bridge is located on a tangent alignment
- Ties = 8" wide x 8" deep x 12'-0" long (no dap)
- Tie Spacing = 12"
- Poor ties counted = 6; ties are in good condition

SPAN NOTES

Span Type: Two four-ply timber stringers (each stringer is 12" wide x 22" deep)

- Stringers are in good condition
- No section loss noted
- Mud sills on north side are starting to crush (under NW stringers)

History:

• Original construction year =1974

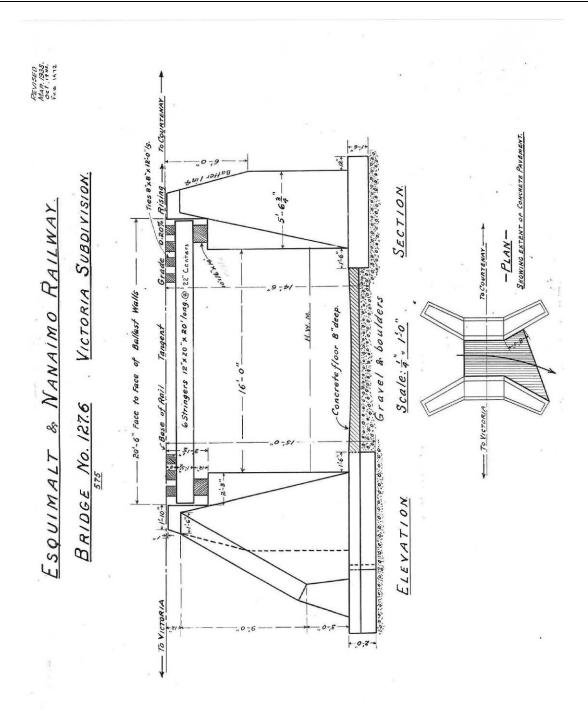
Noted Deficiencies:

Apron in front of abutments drops off approximately 6 feet due to scour (further investigation necessary)





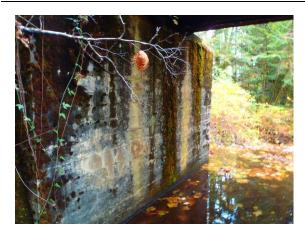
Bridge General Arrangement:







Additional Inspection Photos:



North Abutment View



South Abutment View



Stringers at Bearing (Typical)













Girder View





FEATURE CROSSED: Washer Creek

INSPECTION DATE: 11/02/2011 STREAM DEPTH: 3 ft HEIGHT: 13 ft

NEAREST TOWN: Union Bay, BC FLOW DIRECTION: East TOTAL LENGTH: 111 ft

INSPECTORS: SCW/DBH DECK TYPE: Open SPANS: 28'-2" (DPG), 49'-4" (DPG) &

NO. OF SPANS: Three WALKWAY: No 28'-2" (DPG)

ACCESS METHOD: Snooper HANDRAILS: No

NDT TESTING: No OBSERVED UNDER LOAD: No

Inspection Findings:

ABUTMENT/BACKWALL NOTES

Abutment Type: Concrete Spill-Through Abutments

- · Minimal ballast and debris located on abutment seats
- Moss exhibited on abutments
- · Minor spalling at corners of abutment seats
- · Very minor cracking on abutment face

WINGWALL NOTES

Wingwall Type: Cast-In-Place Concrete

- Minor cracks in wingwalls
- Spalling occurs at corner between backwall and wingwall (see attached photo)
- · Minor efflorescence and moss exhibited throughout faces of wingwalls

PIER NOTES

Pier Type: Cast-In-Place Concrete

Pier 1 Notes:

- No cracking noted
- · No signs of undermining noted
- Minor surface spalling on west and east face of pier

Pier 2 Notes:

- · Minor cracking in concrete wall
- Top of footing on west side (where creek flows) is spalling
- Creek flows alongside Pier 2; no voids found under pier footing; probed during inspection (see attached photo)
- Erosion of embankment at upstream side on north end of pier (sand)

DECK NOTES

- Bridge is located on a tangent alignment
- Ties = 10" wide x 16" deep x 13'-0" long (no dap)
- Tie Spacing = 15"
- Poor ties counted = 14; ties are generally in fair condition
- Several hook bolts missing





SPAN NOTES

Bearing Notes:

Bearings exhibit surface corrosion

Span 1 Notes:

- Paint flaking on all surfaces of girders
- · Minor corrosion on top flange plate

Span 2 Notes:

- Minor surface corrosion and paint flaking on web
- Pack rust between cover plates 1 and 2 where plate 2 ends; all locations (see attached photo)
- Moderate corrosion of bottom flange angles (worse than Spans 1 & 3); especially near bearings
- Minor corrosion of top flange plate
- Angles and bottom plates have been added to strengthen girder (see attached photo)
- Exterior web stiffeners are bent at bottom in multiple locations (see attached photo)

Span 3 Notes:

- Paint flaking on all surfaces of girders
- · Minor corrosion on top flange plate
- · Minor section loss on bottom flange angle
- West girder, south bearing, top plate bent down above bearing; end plate bent at top (see attached photo)

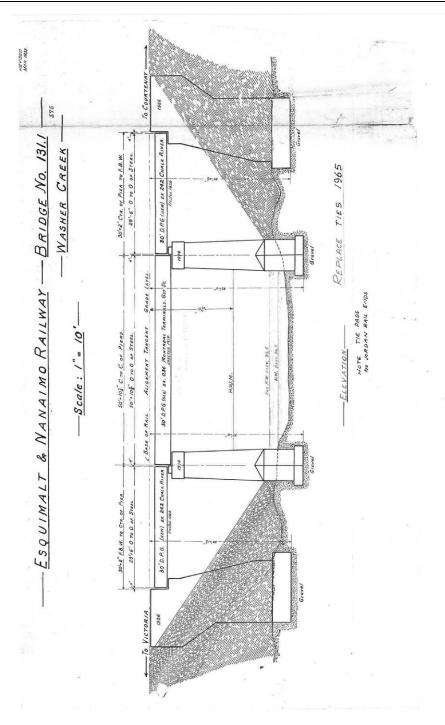
History:

- Original construction year =1914 (Span 2); 1925 (Spans 1 & 3)
- Flanges of Span 2 reinforced for larger locomotives in 1941





Bridge General Arrangement:







Additional Inspection Photos:



Bent Intermediate Stiffener in Span 2



Pack Rust between Cover Plates (Typical)



Bent End Plate at Span 3



Creek Alongside Pier 2







Track View (From Above)





FEATURE CROSSED: Trent River

INSPECTION DATE: 11/02/2011 STREAM DEPTH: 2-5 ft HEIGHT: 80 ft

NEAREST TOWN: Royston, BC FLOW DIRECTION: East TOTAL LENGTH: 289 ft

INSPECTORS: SCW/DBH DECK TYPE: Open SPANS: 2 @ 73'-1 (DPG), 2 @ 43' (DPG) &

NO. OF SPANS: Five WALKWAY: No (1 Refuge Bay) 48'-0" (DPG)

ACCESS METHOD: Snooper HANDRAILS: No

NDT TESTING: No OBSERVED UNDER LOAD: No

Inspection Findings:

ABUTMENT/BACKWALL NOTES

Abutment Type: Concrete Spill-Through Abutments

- North Abutment
 - o Abutment is in good condition; no cracking or spalling noted
 - Debris is accumulating on abutment seat
- South Abutment
 - o Abutment is in good condition; no cracking or spalling noted
 - Slope erosion occurring in front of south abutment (see attached photo)

WINGWALL NOTES

Wingwall Type: Concrete with Timber Extensions

West wingwall extension at north abutment and both south wingwall extensions are being undermined slightly

STEEL BENT TOWER NOTES

Tower 1 Notes

- Base of tower is in fair condition; minor spalls noted
- Heavy rust on column near top of columns due to build up of moss
- · Anchor bolts corroded at top of columns
- Minor pitting below bearing plate and above column top plate (near top of columns)
- Tower legs near base have some section loss; angle leg thickness reduced from 5/8" to 7/16" (0.2" loss)
- SW leg of Tower 1 undermined; extent of undermining not measured but previous measurements by SVI suggest that up to 1/3 of the footing is undermined

Tower 2 Notes

- · Base of tower is in good condition; no detectable undermining
- · Heavy rust on column near top of columns due to build up of moss
- Anchor bolts corroded at top of columns
- Minor pitting below bearing plate and above column top plate (near top of columns)
- Tower legs near base have some section loss; angle leg thickness reduced from 5/8" to 1/2"
- Moss and debris on top of footing
- SE tower footing has a 3" deep by 2" wide crack extending from tower base
- NW tower footing is deteriorating on the south face (spall 2" deep by 6" high)
- South strut at base has 3/8" pack rust and is corroded to a knife edge (localized) in top flange





- East strut at base has section loss in bottom flange (approximately 1/8" at midspan)
- North strut exhibits 1/8" pitting and 1/16" corrosion
- Timber retaining wall at NW footing is rotted and collapsing (retains approximately 3' of soil)

DECK NOTES

- · Bridge is located on a tangent alignment
- Ties = 10" wide x 16" deep x 13'-0" long (no dap)
- Poor ties counted = 42; ties are generally in fair condition

SPAN NOTES

Bearing Notes:

· Bearings exhibit some surface corrosion

Span 1 Notes:

- · Minor corrosion on web, bottom flange plate and top flange plate
- · Large amount of moss on bottom flange angle and bottom of top shelf angle
- Lateral bracing system is in fair condition; debris accumulating at connections
- · Bearing stiffeners appear newer than rest of girder
- · Heavy debris at bearings

Span 2 Notes:

- Section loss on bottom flange angles (see note in Appendix B for details)
- · Minor corrosion on web, bottom flange plate and top flange plate
- · Large amount of moss on bottom flange angle
- Lateral bracing system is in fair condition; debris accumulating at connections
- · Bearing stiffeners appear newer than rest of girder
- · Heavy debris at bearings

Span 3 Notes:

- Top flange angle bending down on outside above bearings (east girder)
- Minor corrosion on web, bottom flange plate and top flange plate
- · Large amount of moss on bottom flange angle
- · Lateral bracing system is in fair condition; debris accumulating at connections
- · Bearing stiffeners appear newer than rest of girder
- Heavy debris at bearings

Span 4 Notes:

- Minor corrosion on web, bottom flange plate and top flange plate
- Small amount of moss on bottom flange angle
- Lateral bracing system is in fair condition
- Heavy debris at bearings
- · West girder better condition than east





Span 5 Notes:

- Minor corrosion on web, bottom flange plate and top flange plate
- Lateral bracing system is in fair condition; gusset plate exhibits 1/16" section loss
- Bottom flange angles exhibit loss in the following locations:
 - o Pitting in vertical leg of interior angle (west and east girder) at 1/3 points of spans (2" x 1/8")
 - o Pitting in vertical leg of exterior angle (west girder) at 1/3 points of span (2" x 1/8")
 - Pitting on top surface of horizontal leg (east girder) at north end of span (3" x 1/16")
- Heavy debris at bearings
- Rolling defect in east girder top shelf angle, 4th stiffener from south
- Pitting in vertical leg of bottom interior flange angles (2" x 1/8")

REFUGE BAY NOTES

One broken floor plank in refuge bay

History:

- Original construction year =1914 (Spans 2, 3 & 4); 1925 (Spans 1 & 3)
- SVI found that the SE leg of Tower 1 was undermined
 - Extend of undermining measured at approximately 1/3 of the footing width
 - o Plans show timber piles under footing; the existence of piles could not be confirmed by inspection.

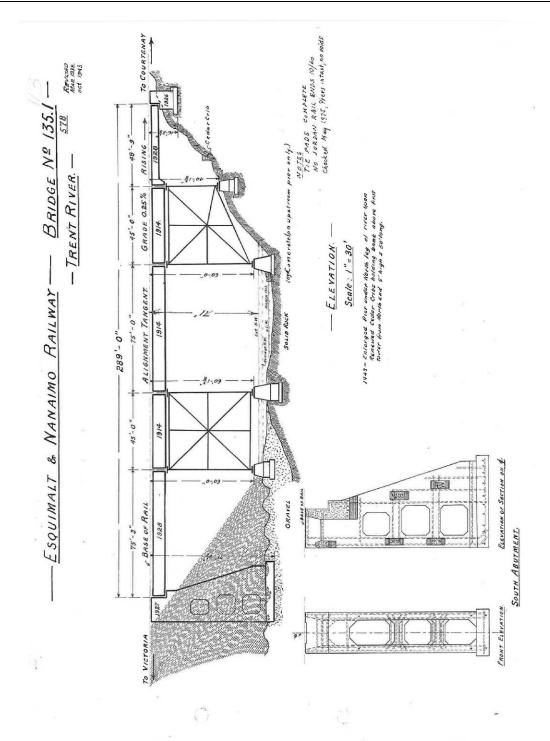
Noted Deficiencies:

Footing of SE leg at Tower 1 has been undermined (further investigation necessary)





Bridge General Arrangement:







Additional Inspection Photos:



Bird's Nest at Longitudinal Stiffener



Corroded Gusset Plate inside Girder



Broken Floor Plank in Refuge Bay



Slope Erosion in front of South Abutment



Bent Top Shelf Angle (Span 5)



Bearing at Top of Steel Towers



Michael J. Slormon , 2/15/2012



Closure

The services provided by Associated Engineering and Alfred Benesch & Company in preparation of this report were conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession practising under similar conditions. No other warranty expressed or implied is made.

Respectfully submitted,

Prepared by:

Reviewed by:

Michael J. O'Connor, PE

Project Manager

Alfred Benesch & Company

Nikola Cuperlovic, P.Eng.

N. Inper LA

Project Manager

Associated Engineering



Appendix A: Non-Destructive Testing Reports







Acuren Group Inc.

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604.274.7235

Phone: 604.275.3800

Fax:

NDT, Inspection and Materials Engineering a Rockwood Company

ASSOCIATED ENGINEERING COMOX, BC

ATTENTION: DALE B. HARRISON

BRIDGE 125.5

OCTOBER 19, 2011

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NONDESTRUCTIVE EXAMINATION REPORT

TO: ASSOCIATED ENGINEERING PAGE: 1
1994 COMOX AVENUE DATE: October 19, 2011 TIME: ---

COMOX, BC V9M 3M7 ACUREN JOB #: 6057420

P.O.:

WORK LOCATION: On Site

ATTENTION: DALE B. HARRISON ACCEPTANCE

PROJECT: Bridge 125.5 STANDARD: Client's information Rev./DATE: ---

PROCEDURE #: UT-0017 Rev./Date: Apr 07

ITEM(s) TESTED: Various Components as per Client TECHNIQUE #: --- REV./DATE: ---

PART #: --- MATERIAL: Carbon steel THICKNESS: varied

Scope: Ultrasonic testing of pins and magnetic particle testing of various components on the bridge as directed by

client.

Type(s) of Inspection: Magnetic Particle; Ultrasonic

RESULTS: (Imperial)

Ultrasonic Testing:

In total, eight (8) pins were tested ultrasonically on the 125.5 Sable River Bridge. See Table 1 below for complete list and results. The pins range in length from approximately 15"-40". No test pins were provided as reference and the instrument was initially calibrated for distance using an IIW block. A lower pin was tested, in situ, and measured with a tape measure to confirm length. The amplitude on the instrument was adjusted until the back wall signal was at 80% full screen height. This amplitude (52DB) was used as a reference level for the rest of the pins. Scanning was performed at 6DB above reference level.

The pin's surface condition varied between each location. At some locations, the surface condition was extremely rough, mostly machine marks from installation. Where necessary and accessible a power grinder with grinding stone was used to provide an appropriate surface for testing. Other pin ends had a convex geometry with an inverted dimple in the centre making probe coupling difficult. Where possible the pins were read from both ends.

A note on the instrument's settings; Although the frequency of the available probe used was 2.25MHz the frequency on the instrument was set to 2.00MHz and sometimes to 1.00MHz. This provided a cleaner signal, in most cases, due to the material being tested. In addition, the filter settings were set to match the actual frequency of the probe used, this provided a cleaner signal, and is recommended in the Epoch XT user manual; "Due to the shifting of the frequency spectrum in most materials, it might be necessary to adjust filter settings to maximize instrument performance" (Photo 1).

Pins were numbered from 0-9 starting from the south end. Right and Left sides (looking north) were designated using an R or an L. The pins were also labelled as Upper (U), and Lower (L). All pins inspected found to be acceptable.



Bridge 125.5 Page 2

TABLE 1: PINS UT INSPECTED AND LOCATION.

Location	Number	Results
Left Upper	0	100% back wall
Left Lower	1	100% back wall
Left Lower	4	100% back wall
Left Upper	4	100% back wall
Right Upper	5	100% back wall
Right Lower	5	100% back wall
Right Upper	9	100% back wall
Right Lower	9	100% back wall

Magnetic Particle Testing:

As requested, several areas and components were magnetic particle tested. See Table 2 below for the full scope and results of the testing, as well as the photos for more details (Photos 2-12).

Columns were numbered from 0-9 starting from the south end. Right and Left sides (looking north) were designated using an R or an L. Upper and Lower areas more with a U or an L.

TABLE 2: LOCATION AND DESCRIPTION OF THE MAGNETIC PARTICLE TESTING

Location	Description	Results
Left Lower 1	End of Eyebar #2 (counting from left to right)	MT Ok.
Left Lower 2 - Upper 1	End of diagonal.	Inherent defects noted visually and confirmed with MPI. See photos.
Left Lower 4 to Upper 5	End of diagonal.	MT Ok.
Left Lower 4 to Lower 3	End of Eyebar #1 (counting from left to right)	Inherent defects noted visually and confirmed with MPI. See photos.
Between Upper 4 and Upper 5 on Queen Post Truss #4	Turnbuckle on #4 Queen Post Truss (counting left to right)	1" crack indication noted - see photos.
Between Upper 5 and Upper 6 on Queen Post Truss #3	Threaded Clevis #3 (counting left to right)	MT Ok.
Between Upper 5 and Upper 6 on Queen Post Truss #3	1' portion of threaded rod at bend approximately 4' from Clevis #3	MT Ok.
Between Upper 7 and Upper 8 on Queen Post Truss #4	Turnbuckle #4 (counting left to right)	MT Ok.
Right Upper 4 to Lower 5	Turnbuckle #4 (counting left to right)	MT Ok.
Right Lower 5	End of Eyebar #4 (outside eyebar)	MT Ok.
Right Lower 7	End of Eyebar #4 (outside eyebar)	MT Ok.
Right Lower 7 to Upper 8	End of Diagonal	MT Ok.



Bridge 125.5 Page 3

Photo 1:

Screen shot showing typical inspection results. This one from Left side Upper pin number 4.

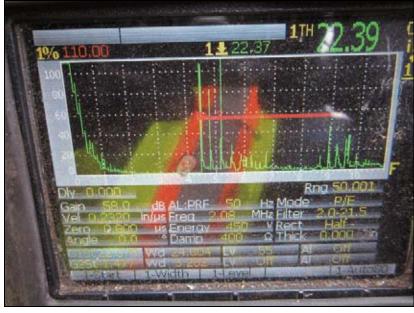


Photo 2:

Overview of the Queen Post Truss.



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CLIENT REPRESENTATIVE:

TECHNICIAN: (Signature on original)
PRINT NAME:
B. McIntosh
1st Technician

CGSB/SNT Level II CWB 1 CGSB Registration No. 11008 2nd Technician

KILOMETRES: OTHER CHARGES: YES ☐ NO ☐



Bridge 125.5 Page 4

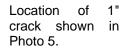
Photo 3:

Testing performed on Right Lower 5 eyebar end. MT Ok.



Photo 4:

Overview of turnbuckle #4 on the Queen Post Truss running between Upper 4 and Upper 5.







Bridge 125.5 Page 5

Photo 5:

Close up of the 1" crack indication found on the turnbuckle #4 on the Queen Post Truss running between Upper 4 and Upper 5.



Photo 6:

Overview of the end of eyebar #1 (outside) running from LL4 to LL3 showing the location of the inherent defects noted visually and confirmed with MPI.

Photo 7

Photo 8





Bridge 125.5 Page 6

Photo 7:

Manufacturing defects noted at neck of eyebar. This pattern could be seen visually before magnetic particle test was performed.



Photo 8:

Original manufacturing defects noted at bottom of eyebar. This pattern could be seen visually before magnetic particle test was performed. Appears to be shrinkage cracks.

This bar in behind eyebar not attached to it. See overview in Photo 6.





Bridge 125.5 Page 7

Photo 9:

Overview of Left Lower 2 to Upper 1 Diagonal eyebar where inherent manufacturing defects were noted.

Markings in Photo 10 found here.



Photo 10:

Markings noted on edge of eyebar located at of Left Lower 2 to Upper 1 Diagonal eyebar. Magnetic Particle testing showed no crack indications coming off of these grooves.





Bridge 125.5 Page 8

Photo 11:

Opening on sheave at pin Lower Left 1 allowing moisture to corrode pin.



Photo 12:

Corrosion noted on outer surface of pin at Lower Left 1. The corrosion on the side could not be seen with the ultrasonic test from the end of the pin.





Bridge 125.5 Page 9

TEST DETAILS: MAGNETIC PARTICLE							
TYPE: Wet Visible		METHOD: Yoke					
PARTICLE BRAND: Ardrox	PRODUCT No.: 8031	CURRENT: AC MT INSTRUMENT: Parker B-300					
PARTICLE COLOUR: Black		MT INSTRUMENT S/N: see "APPENDIX" CAL DUE: see "APPENDIX"					
SUSPENSION: Oil		BLACKLIGHT S/N: MAKE:					
CONTRAST PAINT: Ardrox	PRODUCT No.: 8901W	LIGHTING EQUIPMENT:					
MAG TIME (SECONDS): 20	DEMAG REQUIRED?: No	LIGHT METER S/N: CAL DUE:					
		LIGHT INTENSITY:					
THE TECHNIQUE HAS BEEN DEMON	ISTRATED OVER A PAINTED SURFACE	: Yes					
0	and the state of t	0					

SURFACE CONDITION: As ground SURFACE TEMPERATURE: 57°C/135°F to 316°C/600°F

TEST DETAILS: ULTRASONIC

TYPE: Flaw Detection		METHOD: Contact			
INSTRUMENT: Panametrics	MODEL: Epoch XT	S/N: see "APPENDIX"	CAL DUE: see "APPENDIX"		
CAL. BLOCK: IIW	S/N: see "APPENDIX"	CABLE-TYPE: Coaxial	LENGTH: see "APPENDIX"		
CAL. BLOCK:	S/N:	COUPLANT: UTX			
CAL. BLOCK:	S/N:	SPECIAL EQUIP.:			

TRANSDUCER MANUFACTURER & TECHNIQUE DETAILS:

Ī		TEST	PROBE	FREQUENCY	SERIAL	PROBE	TRANSFER	TEST	REFERENCE	Refei	RENCE	SCAN	
L		ANGLE	TYPE	(MHz)	Number	Ø	VALUE	FROM	REFLECTOR	dB	% FSH	SENSITIVITY	RANGE
Ī	1	0°	GE	2.25	022LDX	1"	0	Surface	Backwall	76	100	+6DB	50"

SURFACE CONDITION: As ground SURFACE TEMPERATURE: 0°C/32°F to 120°C/250°F

Appendix B: Field Inspection Notes





HDPG SPANS

E&N Railway

SECTION: Victoria to Nanaimo

SPAN TYPE: TIMBER THESTLE

HEIGHT: VANIES

MILE POST # 79. /

CROSSING: 120AD STREAM: 1/4

INSPECTION DATE: OCT 6, ZO 1/ STREAM DEPTH: NA

LOCATION: 5V1-79.1 FLOW DIRECTION: NA LENGTH: 105-0" (APPROX)

INSPECTORS: MT/K/3 DECK TYPE Open / Ballast RATING: —

NO. OF SPANS: > WALKWAY: (Yes/No-E/W side) SPAN LENGTH(S):

NO. OF TRACKS: | HANDRAILS: (Yes No - E/W side) 13'-9-13'-3-14'-0'-18'-10'-18'-10'-18'-10'-13'-3-13'-

Inspection Findings:

ABUTMENT NOTES

Type of Abutment Construction = TIMBEN TRESTLE

South:

- 1. Evidence of scour / undermining = 1/14
- 2. Drift accumulated = N/A
- 3. Ballast/debris on bearings = MINOTO
- 4. Vegetation on face/seat = Some Minor GRASS
- 5. Spalling =
- 6. Cracking under bearings = ----
- 7. Cracking elsewhere = ---
- 8. Rotation =
- 9. Exposed reinforcing steel =
- 10. Efflorescence =
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) = \sqrt{A}
- 13. Evidence of stone movement (masonry abutment) = M/A-Other Notes:

North:

- 1. Evidence of scour / undermining = V/A
- 2. Drift accumulated = N/A
- 3. Ballast/debris on bearings = MINIM
- 4. Vegetation on face/seat = MNNICMASS GROWTH
- 5. Spalling = ---
- Cracking under bearings =
- 7. Cracking elsewhere =
- 8. Rotation =
- Exposed reinforcing steel =
- 10. Efflorescence =
- 11. Missing or fractured stones (masonry abutment) = V//A
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) = VIPP Other Notes:

	Type of Wingwall Construction = TIMBEN
	Type of Backwall Construction = TIMBER
	South Abutment:
	1. Undermining =
	2. Cracks =
	3. Spalling =
	4. Leaning =
	5. Exposed reinforcing steel =
	Other Netec
	TIMBER PLANKS SEPERATING ELIGHTH - SOME ENOSION DUE TO THIS
	North Abutment:
	1. Undermining =
	2. Cracks =
	3. Spalling =
	4. Leaning =
	5. Exposed reinforcing steel =
	Other Notes:
	TIMBER PLANKS SEPERATINGSLIGHTY - SOME ENGRE DUE TOTAL
DE	ECK NOTES
	Ballast lopen deck = OPEN
	Track Alignment Notes:
	1. Bridge on tangent or curve = STWNO
	2. Max. superelevation at midspan = NOT NOTED
	3. Chord offset at midspan (distance from center of track to center of girders) = NO
	Other Notes:
	Ballast Deck Notes (if applicable):
	1. Ballast depth =
	2. Ballast retainer size =
	3. Floor plate / floor timber condition =
	4. Deck width =
	Other Notes:
	<u>Other Notes.</u>
	Tie Notes:
	1. Tie size = wide x deep x long with bearing-bearing length =
	2. Tie spacing = 12"0/c
	3. Ties dapped for superelevation =
	4. Rail plates cutting into ties = *** *** ***************************
	5. Overall tie condition = 706 Good - 308 B AD
	6. Approach ties swinging = NO
	7. Approx. number of bad ties = 301
	8. Section loss to be used in rating flexural ties = VIA
	Other Notes:
	Tie Support Angles (if applicable):
	1. Size of angles =
	2. Overall condition =
	3. Cragks evident =
	4. Bearing length of tie on angle =

BACKWALL/WINGWALL NOTES

Track Notes:

- 1. Rail section weight =
- 2. CWR or jointed rail =
- 3. Inner guardrail size/weight (if applicable) =
- 4. Is line of track good = APPEA KS 70 BE COOO
- 5. Approaches low = YES! Low mile use SIDE Other Notes

Walkways/Refuge Bay Notes:

- 1. Walkways on bridge =
- 2. Walkway condition =
- 3. Refuge bays on bridge =
- 4. Refuge bay condition =

Other Notes:

SPAN NOTES

Girder spacing = 5'-0'C/C(CoNFIRM)

Girder depth = 1'-4"- 7'

General steel condition = Good

Bearing Notes:

- 1. Type of bearings = WOOD ON WOOD
- 2. Full bearing = VES
- 3. Bearing corrosion = **/*
- 4. Anchor bolt condition = Moderate
- 5. Expansion bearings functioning properly or frozen =
- 6. Bearings punching into abutment seat = 100

Other Notes:

Span 1 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

NOTE: BEARING OF DEEP
BEAM (a) BENT #2 \$6
15 POOR. 14"WIDE BENT
10"BEAR INC. FORSHAHLOW
4"FOR DEEP-SEE PICTURES

History:

- Original construction year =
- Summary of bridge updates =

Recommended Work:

ITEM #

RECOMMENDED WORK

Timber Trestles

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST # 79.9

CROSSING:

STREAM:

SPANTYPE: TIMBER TRESTE

INSPECTION DATE: 10/15/11

STREAM DEPTH: | FT FLOW DIRECTION: EAST

HEIGHT:

LOCATION:

LENGTH:

INSPECTORS: D MFB/DBH

DECK TYPE: Open Ballast

RATING:

NO. OF SPANS: 14

WALKWAY: (Yes/No - E/W side)

SPAN LENGTH(S):

NO. OF TRACKS:

HANDRAILS: (Yes/No - E/W side)

Inspection Findings:

END BENT NOTES

Type of End Bent Construction =

1. # of piles = 5

2. Pile diameter = 11

3. Pile cap size = $\frac{29}{\text{deep}} \times \frac{13}{\text{wide}}$

South End (Bent 1):

- 1. Drift accumulated =
- 2. Bent rotation = Nonc
- 3. Pile cap general condition = 600 P
- 4. Pile cap bulging/splitting = NO
- 5. Pile cap has excessive internal/external decay =
- 6. Pile general condition = 6000, mostly BURIED BRIEN GROUND
- 7. Piles have excessive internal/external decay = NO
- 8. Piles bulging/splitting = ND

Other Notes:

North End (Bent TBD):

- 1. Drift accumulated = No
- 2. Bent rotation 50
- 3. Pile cap general condition = CONCRETE CAP, NO CRACKE
- 4. Pile cap bulging/splitting =
- 5. Pile cap has excessive internal/external decay =
- Pile general condition =
- 7. Piles have excessive internal/external decay =
- 8. Piles bulging/splitting =

Other Notes:

INTERMEDIATE BENT NOTES

Use timber schematic to mark up section loss in individual piles.

- 1. # of piles =
- 2. Pile diameter =
- 3. Pile cap size = deep x
- 4. Bents plumb =
- 5. Signs of pumping piles =
- 6. Signs of scour/erosion =
- 7. Posted piles =

SEE DETRICED SHEETS

DAGIGWALI ANDROMALI MATER
BACKWALL/WINGWALL NOTES
Type of Wingwall Construction =

Type of	Backwall	Construction	=
---------	----------	--------------	---

South End: 1. Undermining = $\sqrt{0}$ Cracks =

3. Leaning = N 0

Other Notes:

TIMBER RETAINING WALLS
- SOME EROSION AT BASE
- WALLS IN GOOD CONDITION

NW, - concrte retario wall

North End:

- 1. Undermining =
- 2. Cracks =
- 3. Leaning =

Other Notes:

DECK NOTES

Ballast / open deck = Open

Track Alignment Notes:

1. Bridge on tangent or curve = + NGENT

2/ Max. superelevation at midspan = 18

3. Chord offset at midspan (distance from center of track to center of stringers) = Other Notes:

Ballast Deck Notes (if applicable):

- 1. Rallast depth
- 2. Ballast retainer size =
- 3. Floor plate / floor timber condition =
- 4. Deck width =
- 5. Floor timber size =

Other Notes:

1. Tie size =9" wide x 8" deep x 12' long

2. Tie spacing = \\"

Ties dapped for superelevation = №o

4. Rail plates cutting into ties = NO

5. Overall tie condition = 6000

6. Approach ties swinging = -7. Approx. number of bad ties =

8. Method of tie connection =

Other Notes:

Track Notes:

- 1. Rail section weight =
- 2. CWR or jointed rail = \(\int_0 \int_1 \cdot \

/Sw Inner guardrail size/weight (if applicable) =

- 4. Is line of track good =
- 5. Approaches low =

Other Notes -

. Approach this swinging at N. Abut.

Walkways/Refuge Bay Notes:	
1. Walkways on bridge = No	
2. Walkway condition = N/A	
3. Refuge bays on bridge = YES, I 4. Refuge bay condition = GOOD CONDITION WY ADEQUATE PAILING Other Notes:	
Other Notes:	
PAN NOTES	
1. # of stringers = 2 4pt/ Stringers	
1. # of stringers = 2 4pty Stringers 2. Stringer size = 17" deep x 9" wide (4 pty / 2 stringers)	
3. Out-out of exterior stringers =	
4. General stringer condition = a shape of D. 3/a LOSS OW GX D. CO. T.	
4. General stringer condition = () 3/3" LOSS OW EXPOSED FACED Use timber span schematic for marking up section loss in individual stringers where required	1
occ amber span solicitiate for marking up section loss in markingers where required	ı

5. Ends of stringers crushing = \sqrt{c}

6. Horizontal shear cracks in stringers =

7. Fractured stringers =

8. Decay/insect damage =

Other Notes:

EXTRA TIMBER MEMBER NOTES (WHERE IN PLACE)

Longitudinal bracing =
 Longitudinal bracing size =
 Longitudinal bracing condition =
 Sway bracing =
 Sway bracing size =
 Sway bracing condition =
 Sash bracing =
 Sash bracing size =

9. Sash bracing condition = 10. Mud sills @ bents = 11.

11. Mud sill condition = N/A
Other Notes:

- DIAGONAL SWAY LOW DEREST - DIAGONAL SWAY LOW DEREST - DEW LONGITUDINAL STRUTS HAVE BEEN ADDED.

- NEW SAGH AND SWAY BYLLING AT THE BENTS

History:

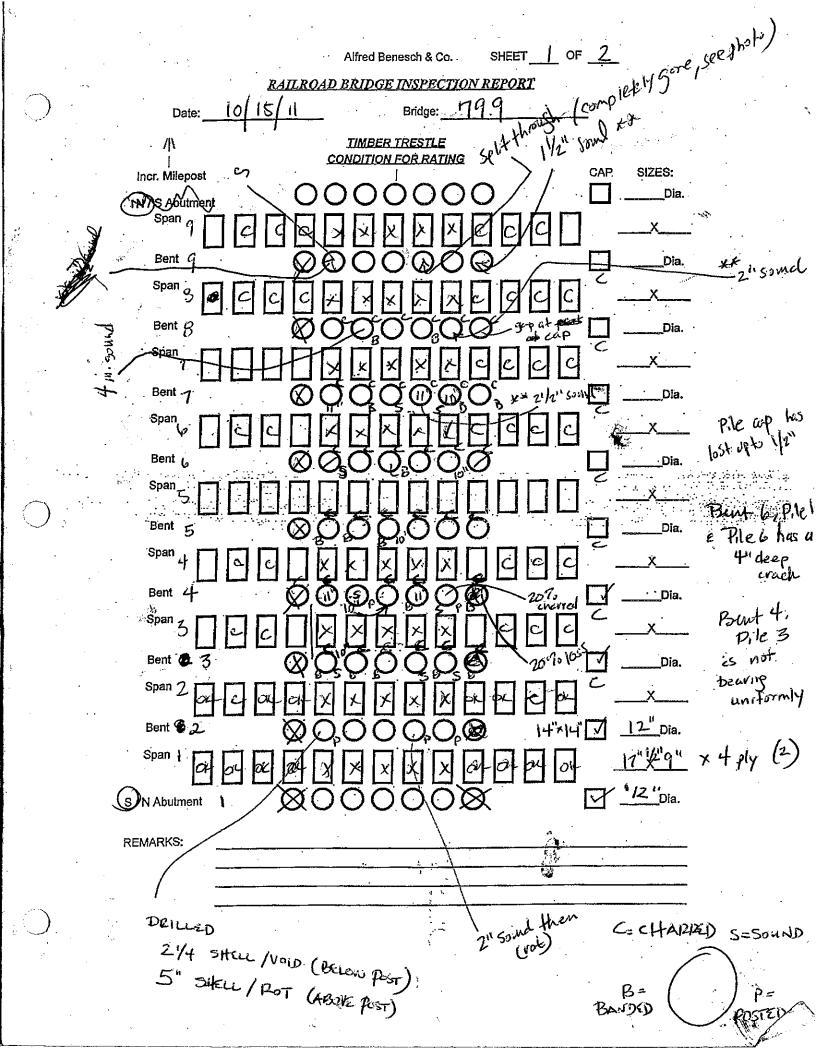
- Original construction year =
- · Summary of bridge updates =

Recommended Work:

ITEM#

1

RECOMMENDED WORK

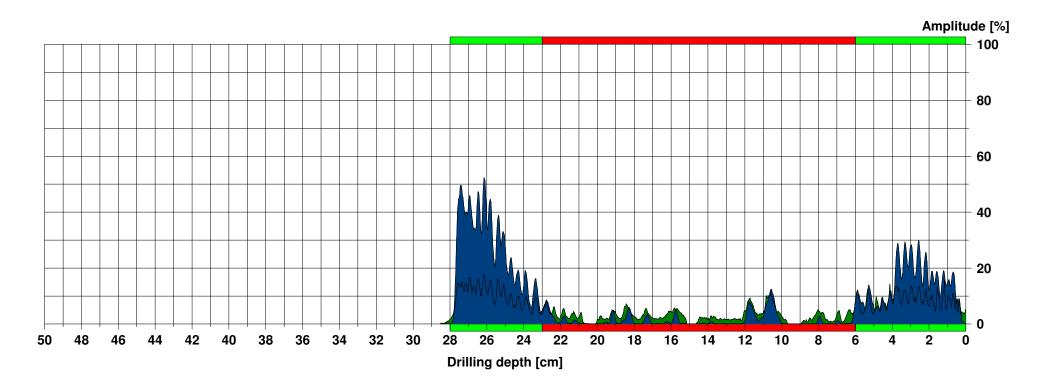


	Ended one of the desired,
	WINTER TAKE 3/8" OFF BOTTOM AND SIDES WHITE STATES GROUPS OFF STATES GROUPS * IN CENERALY TAKE SOOD OFF OF ALL STAINGERS TO BE FOR CHAPE
	of open 13 h
	2 RJ 510CS
	TAKE 3/8" OFF BOTTOM AND SIDES WINDAD ONFE STATISER GROUPS A 1/2" TO ALL STAINGERS
	IN GENERALY TAKE STON OFF OF ALL STAINGERS
	The state of the s
	Spart, Stringer 8 - chech, 3 incho deep (half -length)
,	- bracing between Bants 1/2. - charved and a little loose
	2 S
	HAbort 15 CONCRETE CAP. CCCC CCCC
£	Som 14 - course chanced stainbend
2	SCC () I I TO THE
-	5 SOUNDE ON - BUT 13 WIR STILL SOUND
	CONCRETE STAPS
	2/2 sand Pred 12 50 0 0 0 4x
	First Sparil puto 0 0 0 0 0 0 0
	/ OKCCO
	Bent 10/0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	13/4" OFF-CENTED

Measurement no.: 13 Needle speed: 5000 r/min Diameter: 28,0 cm : MILE 79.9 ID number Needle state : ok Level **Drilling depth** : 28,51 cm : 97° (1°) Tilt Direction: : 15.10.2011 Species : Doug-Fir : 130/352 Date Offset Location: Time : 10:58:51 Avg. curve : off Feed speed : 50 cm/min Name

Cavity detector

Start / stop level : --Maximum start depth : --Mode : --Level / width : --Start / stop : --Resulting length : --Cavity : ---



Assessment

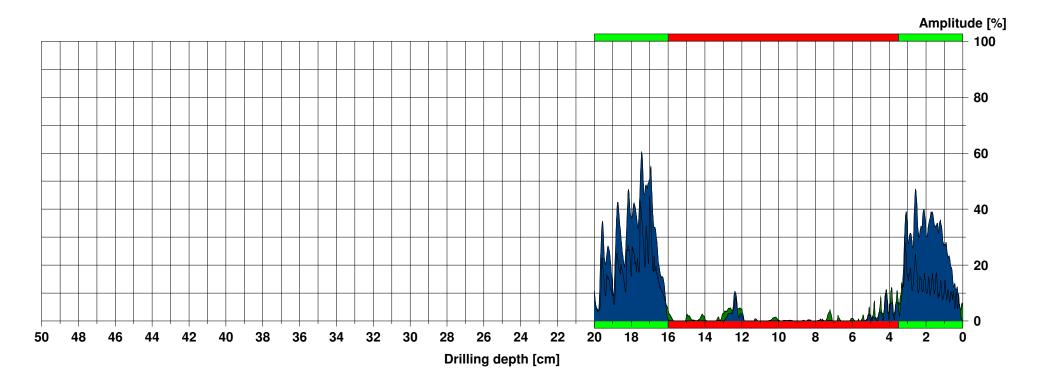
From	0,0 cm	to	6,0 cm : Sound
From	6,0 cm	to	23,0 cm : Rot
From	23,0 cm	to	28,0 cm : Sound
From	0,0 cm	to	0,0 cm :
From	0,0 cm	to	0,0 cm :
From	0,0 cm	to	0,0 cm :

Comment

Measurement no.: 4 Needle speed: 5000 r/min Diameter: 20,0 cm : MILE 79.9 ID number Needle state : ok Level **Drilling depth** : 92° (1°) : 20,00 cm Tilt Direction: : 15.10.2011 Species : Doug-Fir Date Offset : 141/526 : 10:38:10 Location: Time Avg. curve : off Feed speed : 50 cm/min Name

Cavity detector

Start / stop level : --Maximum start depth : --Mode : --Level / width : --Start / stop : --Resulting length : --Cavity : ---



Assessment

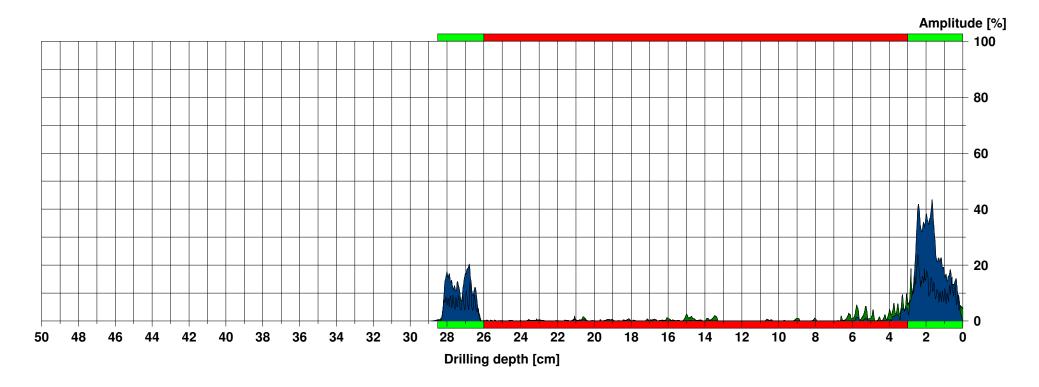
From	0,0 cm	to	3,5 cm : Sound	
From	3,5 cm	to	16,0 cm: Void	
From	16,0 cm	to	20,0 cm: Sound	
From	0,0 cm	to	0,0 cm :	
From	0,0 cm	to	0,0 cm :	
From	0,0 cm	to	0,0 cm :	

Comment

Measurement no.: 5 Needle speed: 5000 r/min Diameter: 28,0 cm : MILE 79.9 ID number Needle state : ok Level **Drilling depth** : 28,83 cm : 92° (1°) Tilt Direction: 15.10.2011 Species : Doug-Fir Date Offset : 130/451 Location : Time : 10:40:56 Avg. curve : off Feed speed : 50 cm/min Name

Cavity detector

Start / stop level : --Maximum start depth : --Mode : --Level / width : --Start / stop : --Resulting length : --Cavity : ---



Assessment

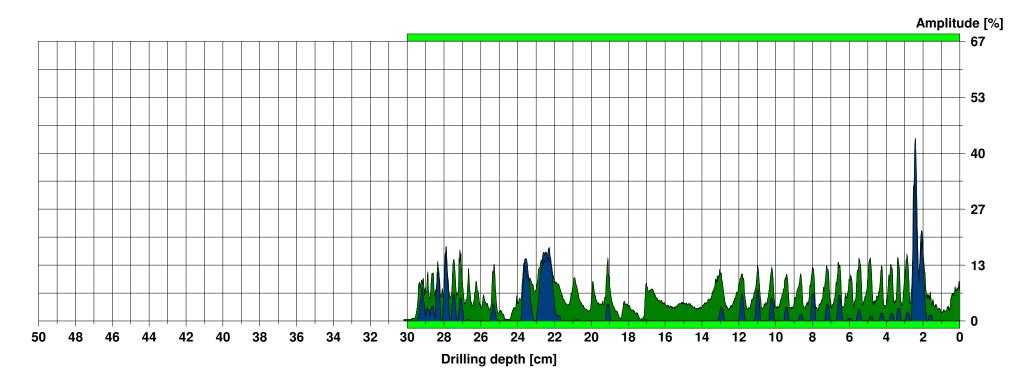
From	0,0 cm	to	3,0 cm : Sound
From	3,0 cm	to	26,0 cm : Void
From	26,0 cm	to	28,5 cm : Sound
From	0,0 cm	to	0,0 cm :
From	0,0 cm	to	0,0 cm :
From	0,0 cm	to	0,0 cm :

Comment

Measurement no.: 7 Needle speed: 5000 r/min Diameter: 30,0 cm : MILE 79.9 ID number Needle state : ok Level **Drilling depth** : 30,19 cm Tilt : 91° (1°) Direction: Species : Doug-Fir 15.10.2011 Date Offset : 194/383 : 10:42:38 Location: Time Avg. curve : off Feed speed : 50 cm/min Name

Cavity detector

Start / stop level : --Maximum start depth : --Mode : --Level / width : --Start / stop : --Resulting length : --Cavity : ---



Assessment

		30,0 cm : Sound
0,0 cm	to	0,0 cm :
0,0 cm	to	0,0 cm :
0,0 cm	to	0,0 cm :
0,0 cm	to	0,0 cm :
0,0 cm	to	0,0 cm :
	0,0 cm 0,0 cm 0,0 cm 0,0 cm	0,0 cm to 0,0 cm to 0,0 cm to 0,0 cm to 0,0 cm to 0,0 cm to

Comment

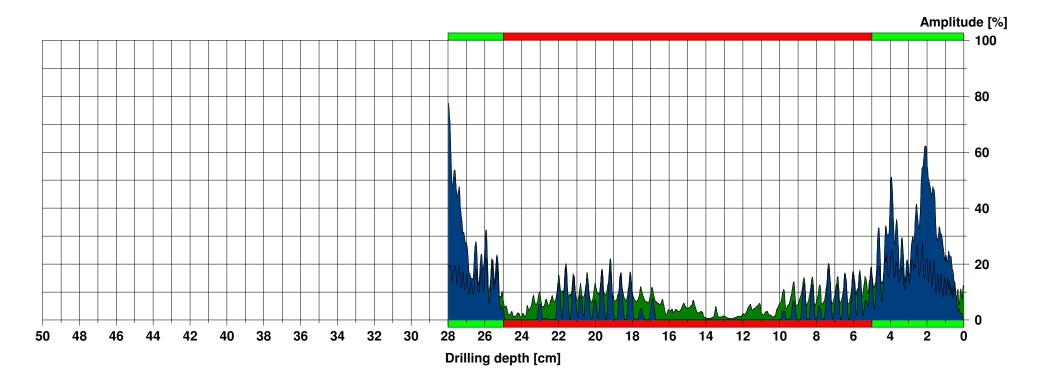
: 99 cm/min

Feed speed

Measurement no.: 8 Needle speed: 5000 r/min Diameter: 28,0 cm : MILE 79.9 ID number Needle state : ok Level **Drilling depth** : 27,97 cm : 97° (1°) Tilt Direction: : 15.10.2011 Species : Doug-Fir Date Offset : 199/358 Location: Time : 10:47:20 Avg. curve : off

Cavity detector

Start / stop level : --
Maximum start depth : --
Mode : --
Level / width : --
Start / stop : --
Resulting length : --
Cavity : ---



Name

Assessment

From	0,0 cm	to	5,0 cm	:	Sound
From	5,0 cm	to	25,0 cm	:	Rot
From	25,0 cm	to	28,0 cm	:	Sound
From	0,0 cm	to	0,0 cm	:	
From	0,0 cm	to	0,0 cm	:	
From	0,0 cm	to	0,0 cm	:	

Comment

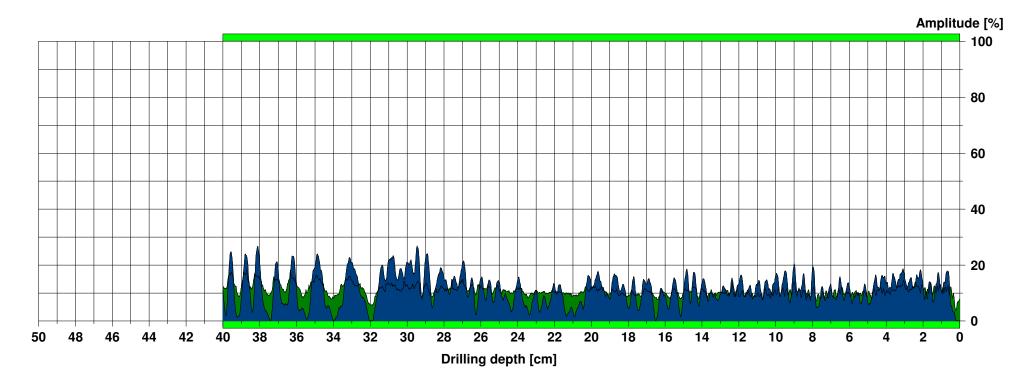
: 99 cm/min

Feed speed

Measurement no.: 9 Needle speed: 5000 r/min Diameter: ID number : MILE 79.9 Needle state : ok Level **Drilling depth** : 40,00 cm Tilt : 156° (1°) Direction: Species : Doug-Fir Date : 15.10.2011 Offset : 220/387 Location : : 10:53:00 Avg. curve Time : off

Cavity detector

Start / stop level : --Maximum start depth : --Mode : --Level / width : --Start / stop : --Resulting length : --Cavity : ---



Name

Assessment

From	0,0 cm	to	40,0 cm : Sound
☐ From			
☐ From	0,0 cm	to	0,0 cm :
☐ From	0,0 cm	to	0,0 cm :
From	0,0 cm	to	0,0 cm :
From	0,0 cm	to	0,0 cm :

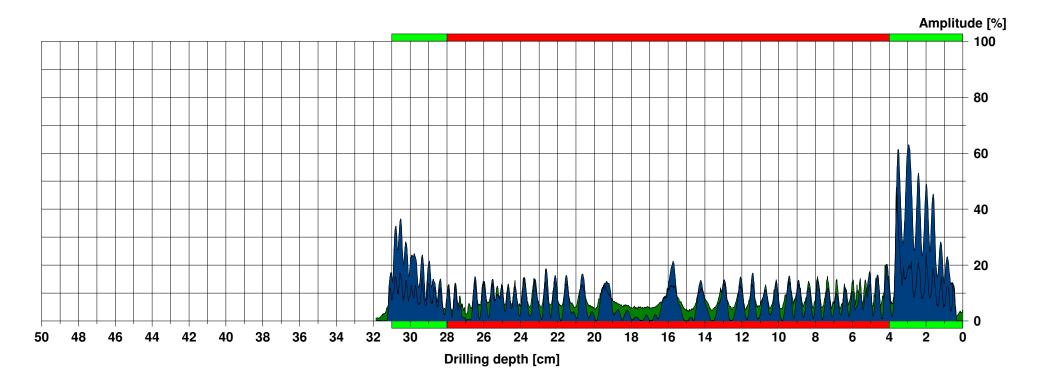
Comment

BENT 8 STR 2

Measurement no.	: 12	Needle speed	I: 5000 r/min	Diameter	:
ID number	: MILE 79.9	Needle state	: ok	Level	:
Drilling depth	: 31,86 cm	Tilt	: 93° (1°)	Direction	:
Date	: 15.10.2011	Offset	: 138/338	Species	:
Time	: 10:55:05	Avg. curve	: off	Location	:
Feed speed	: 50 cm/min	_		Name	:

Cavity detector

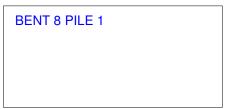
Start / stop level : --Maximum start depth : --Mode : --Level / width : --Start / stop : --Resulting length : --Cavity : ---



Assessment

From	0,0 cm	to	4,0 cm: Sound
From	4,0 cm	to	28,0 cm: Partial Rot
From	28,0 cm	to	31,0 cm: Sound
From	0,0 cm	to	0,0 cm :
From	0,0 cm	to	0,0 cm :
From	0,0 cm	to	0,0 cm :

Comment



DPG SPANS: STEEL BENTS

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST# ŝ.

RH

1976

OPG STREWAY CROSSING: STREAM: | ARAY CLC SPAN TYPE: INSPECTION DATE: 10/25/4 14'6" toy of the STREAM DEPTH: 2 **HEIGHT:** LOCATION: NO SECTION: LENGTH: INSPECTORS: APU / AL DECK TYPE: Open / Ballast RATING: WALKWAY: (Yes/No - E/W side) NO. OF SPANS: SPAN LENGTH(S): 12661 HANDRAILS: (Yes(No)- E/W side) No NO. OF TRACKS:

Inspection Findings:

104 16 + 12

ABUTMENT NOTES

Type of Abutment Construction =

1. Evidence of scour / undermining = N

Cyangos 146

2. Drift accumulated = 😂 🕖

3. Ballast/debris on bearings = Leaves / Minor

4. Vegetation on face/seat = Oca

5. Spalling = D

6. Cracking under bearings = 🔎 ು

7. Cracking elsewhere = Not an Pe Backet 1/2"

8. Rotation = Backet 1/2"

9. Exposed reinforcing steel =

10. Efflorescence = On Backwall

11. Missing or fractured stones (masonry abutment) =

12. Missing mortar from joints (masonry abutment) =

13. Evidence of stone movement (masonry abutment) =

Other Notes:

North:

TIME DA

- 1. Evidence of scour / undermining =
- 2. Drift accumulated = N₀

3. Ballast/debris on bearings =
4. Vegetation on face/seat =
5. Spalling =

Spalling = N₀

- 6. Cracking under bearings = ₽₽₽
- 7. Cracking elsewhere =

8. Rotation = N_0

9. Exposed reinforcing steel = >>

- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

BACKWALL/WINGWALL NOTES Type of Wingwall Construction = Concell Type of Backwall Construction = South Abutment: 1. Undermining = ^{いつ} 2. Cracks = Yes - mia horsontal 3. Spalling = No 4. Leaning = $\sqrt{2}$ $\sqrt{2}$ to work $\sqrt{2}$ 5. Exposed reinforcing steel = $\sqrt{2}$ Other Notes:) was cased in soll-

North Abutment:

1. Undermining = 🔝

1. Undermining = 100
2. Cracks = 400
3. Spalling = 100
4. Leaning = 100

4. Leaning = 人 ○

5. Exposed reinforcing steel = N

Other Notes:

STEEL TOWER BENT NOTES

Tower 1:

- 1. Single or double bent =
- 2. Tower general condition =

Misc. Notes (braces, plumbness, etc):

Tower 1, Base of Legs:

- 1. SW Base Notes =
- 2. SE Base Notes =
- 3. NW Base Notes (if double bent) =
- 4. NE Base Notes (if double bent) =

Tower 1, Top of Legs:

- 1. SW Top Notes =
- 2. SE Top Notes =
- 3. NW Top Notes (if double bent) =
- 4. NE Top Notes (if double bent) =

Tower 2:

- 1. Single or double bent =
- Tower general condition =

Misc. Notes (braces, plumbness, etc):

Tower 2, Base of Legs:

1. SW Base Notes =

- 2. SE Base Notes =
- 3. NW Base Notes (if double bent) =
- 4. NE Base Notes (if double bent) =

Tower 2, Top of Legs:

- 1. SW Top Notes =
- 2. SE Top Notes =
- 3. NW Top Notes (if double bent) =
- 4. NE Top Notes (if double bent) =

Tower 3:

- 1. Single or double bent =
- 2. Tower general condition =

Misc. Notes (braces, plumbness, etc):

Tower 3, Base of Legs:

- 1. SW Base Notes =
- 2. SE Base Notes =
- 3. NW Base Notes (if double bent) =
- 4. NE Base Notes (if double bent) =

Tower 3, Top of Legs:

- 1. SW Top Notes =
- 2. SE Top Notes =
- 3. NW Top Notes (if double bent) =
- 4. NE Top Notes (if double bent) =

Tower 4:

- 1. Single or double bent =
- 2. Tower general condition =

Misc. Notes (braces, plumbness, etc):

Tower 4, Base of Legs:

- 1. SW Base Notes =
- 2. SE Base Notes =
- 3. NW Base Notes (if double bent) =
- 4. NE Base Notes (if double bent) =

Tower 4, Top of Legs:

1. SW Top Notes =

2.	SE Top Notes =
3.	NW Top Notes (if double bent) =
4.	NE Top Notes (if double bent) =
DECK NO	OTES flast / open deck = の代わ
1. 2. 3.	Bridge on tangent or curve = TAMOREM Max. superelevation at midspan = C Chord offset at midspan (distance from center of track to center of girders) = C ner Notes:
1. 2. 3. 4.	Ilast Deck Notes (if applicable): Ballast depth = Ballast retainer size = Floor plate / floor timber condition = Deck width = ner Notes:
1. 2. 3. 4. 5. 6. 7.	Notes: Tie size = wide x deep x long Tie spacing = (_ Ties dapped for superelevation = P = Rail plates cutting into ties = Ves Overall tie condition =
1. 2. 3. 4.	Ck Notes: Rail section weight = 8515 CWR or jointed rail = 515 Inner guardrail size/weight (if applicable) = 8515 Is line of track good = 165 Approaches low = 165

Other Notes

Walkways/Refuge Bay Notes: 1. Walkways on bridge = 2. Walkway condition = 3. Refuge bays on bridge =

- 4. Refuge bay condition =

SPAN NOTES

Girder spacing = 91 /11

Girder depth = 6 f 1 1/2 /11

General steel condition = 6

Span 1 Notes:

1. Web corrosion = NO
2. Bottom flange plate corrosion = Detect of flat is about 2" up substantial about 3" up

4. Top flange plate corrosion = Cooled uh haz

5. Lateral bracing system condition =

6. Bearing stiffener condition = Good

7. # of cross frames and spacing = 📜 👩

8. Loose rivets/bolts = 🗘 🔾 🖯

9. Welds on tension flange = △o

10. Any cracks observed = 10. Other Notes: Horsental obligarer 81/2" below flange - TE'2"

Span 2 Notes:

1. Web corrosion =

2. Bottom flange plate corrosion =

3. Bottom flange angle corrosion =

4. Top flange plate corrosion =

5. Lateral bracing system condition =

6. Bearing stiffener condition =

7. # of cross frames and spacing =

8. Loose rivets/bolts =

9. Welds on tension flange =

10. Any cracks observed =

Other Notes:

Span 3 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 4 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Span 5 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 6 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 7 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- T. " C . .
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

History:

- Original construction year =
- Summary of bridge updates =

Recommended Work:

ITEM#

RECOMMENDED WORK

DPG SPANS: CONC. PIERS

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST

STREAM: HALL TOO CK CROSSING: 87-2

SPAN TYPE:

900

INSPECTION DATE: \ \0/24/()

STREAM DEPTH: 2

HEIGHT:

LOCATION: NAME BAY FLOW DIRECTION:

LENGTH:

DECK TYPE: Open Ballast

RATING:

INSPECTORS: APIS / AL

WALKWAY: (Yes/No - E/W side)

SPAN LENGTH(S):

And passessing

NO. OF SPANS: NO. OF TRACKS:

HANDRAILS: (Yes/No)- E/W side)

Inspection Findings:

ABUTMENT NOTES

Type of Abutment Construction =

South:

- 1. Evidence of scour / undermining = 🛝
- 2. Drift accumulated =
- 3. Ballast/debris on bearings =

 4. Vegetation on face/seat =

 5. Spelling =

 6. Spelling =

 7. Spelling =

 7. Spelling =

 7. Spelling =

 8. Spelling =

 8.
- 5. Spalling = 🔬 o
- 6. Cracking under bearings = 100
- 7. Cracking elsewhere = 10
- 8. Rotation = 💨
- 9. Exposed reinforcing steel = 13.
- 10. Efflorescence = Acad Afficience real back
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) = Other Notes:

North:

- 1. Evidence of scour / undermining = No
- 2. Drift accumulated = A.
- 3. Ballast/debris on bearings =
- 5. Spalling = Alo
- 6. Cracking under bearings = \$\cdot\$7. Cracking elsewhere = \$\ldot\$
- 8. Rotation = 🌭
- 9. Exposed reinforcing steel = 100
 10. Efflorescence = 100 flower flower
- 11. Missing or fractured stones (masonry abutment)
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

BACKWALL/WINGWALL NOTES Type of Wingwall Construction = Type of Backwall Construction =

South Abutment:

- 1. Undermining = 🖊 🔾 🔊
- 2. Cracks = 🛴 🤊
- 3. Spalling = 🔎
- 4. Leaning = A
- 5. Exposed reinforcing steel = 100

Other Notes:

North Abutment:

- 1. Undermining = 🔎
- 2. Cracks = ₹\o
- 3. Spalling = → o
- 4. Leaning = № 3
- 5. Exposed reinforcing steel =

Other Notes:

CONCRETE PIER NOTES

Pier 1:

Type of Construction =

- 1. Undermining =
- 2. Cracks =
- 3. Spalling =
- 4. Leaning =
- 5. Exposed reinforcing steel =

Other Notes:

Pier 2:

Type of Construction =

- 1. Undermining =
- 2. Cracks =
- 3. Spalling =
- 4. Leaning =
- 5. Exposed reinforcing steel =

Other Notes:

<u>Pier 3:</u>

Type of Construction =

- 1. Undermining =
- 2. Cracks =
- 3. Spalling =
- 4. Leaning =
- 5. Exposed reinforcing steel =

Other Notes:

<u>Pier 4:</u>

Type of Construction =

- 1. Undermining =
- 2. Cracks =
- 3. Spalling =
- 4. Leaning =
- 5. Exposed reinforcing steel =

DECK NOTES

Ballast / open deck =

Track Alignment Notes:

- 1. Bridge on tangent or curve =
- 2. Max. superelevation at midspan =
- 3. Chord offset at midspan (distance from center of track to center of girders) = Other Notes:

Ballast Deck Notes (if applicable):

- 1. Ballast depth =
- 2. Ballast retainer size =
- 3. Floor plate / floor timber condition =
- 4. Deck width =

Other Notes:

Tie Notes:

- 1. Tie size = $\sqrt{\bigcirc}$ wide x $\sqrt{\bigcirc}$ deep x $\sqrt{\bigcirc}$ long
- 2. Tie spacing = 100
- 3. Ties dapped for superelevation = 🔎
- 4. Rail plates cutting into ties = 100
- 5. Overall tie condition = ()
- 6. Approach ties swinging = ₽ ♦
- 7. Approx. number of bad ties = 10

Other Notes:

Track Notes:

- 1. Rail section weight = 10015
- 2. CWR or jointed rail =)
- 3. Inner guardrail size/weight (if applicable) = \$\sigma \sigma \limins\$
- Is line of track good = [→]
- 5. Approaches low =

Other Notes

Walkways/Refuge Bay Notes:

- 1. Walkways on bridge =
- 2. Walkway condition =
- 3. Refuge bays on bridge =
- 4. Refuge bay condition =

Other Notes:

SPAN NOTES

Girder spacing = 10 Girder depth = 50 % They 15% General steel condition =

Span 1 Notes:

- 1. Web corrosion = 1/6 for 2" are profited by 2" are profited by 2" are profited by 2" and profited by 2" and profited by 2" are profited by 2" and profited by 2" and profited by 2" and profited by 2" are profited by 2" ar
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion = None.
- 5. Lateral bracing system condition = ()
- 6. Bearing stiffener condition = 7. # of cross frames and spacing =

- 8. Loose rivets/bolts =9. Welds on tension flange =
- 10. Any cracks observed = N

Other Notes:

Spm is superdevaled for come

Span 2 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 3 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 4 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 5 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

DECK TRUSS SPANS

LAAN L

E&N Railway

SECTION: Victoria to Nagaimo 2nd Uard

MILE POST # 93.0

STREAM: ENGLISHMAN R

SPAN TYPE: December 2005

INSPECTION DATE: 10/26/11

STREAM DEPTH: 2 !

HEIGHT:

LOCATION: INSPECTORS: APA / AL

FLOW DIRECTION:

LENGTH: RATING:

NO. OF SPANS:

DECK TYPE: Open / Ballast

SPAN LENGTH(S):

NO. OF TRACKS:

CROSSING:

WALKWAY: (Yes/No)- E/W side) HANDRAILS: (Yes/No - E/W side)

121

Inspection Findings:

ABUTMENT NOTES

Type of Abutment Construction = Conc.

South:

- 1. Evidence of scour / undermining = \(\int_{\infty}\).
- 2. Drift accumulated = 100
- Ballast/debris on bearings = √es
- 4. Vegetation on face/seat = \langle 656 / \langle 7255
- 5. Spalling = 刈る
- 6. Cracking under bearings = No.
- 7. Cracking elsewhere = 😂
- 8. Rotation = No
- 9. Exposed reinforcing steel = No
- 10. Efflorescence = 📣
- 11. Missing or fractured stones (masonfy abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) = Other Notes:

North:

- 1. Evidence of scour / undermining = 100
- 2. Drift accumulated = / 2
- 3. Ballast/debris on bearings = 1000 S4. Vegetation on face/seat = 1000 S
- 5. Spalling =
- 6. Cracking under bearings = []
- 7. Cracking elsewhere = 3.3
- 8. Rotation =
- 9. Exposed reinforcing steel = 😂 🕽
- 10. Efflorescence = r
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) = Other Notes:

BACKWALL/WINGWALL NOTES

Type of Wingwall Construction =
Type of Backwall Construction =
South Abutment: 1. Undermining = 2. Cracks = 3. Spalling = 3. 4. Leaning = 4. Lean
North Abutment: 1. Undermining =
DECK NOTES Open deck =
Track Alignment Notes: 1. Bridge on tangent or curve = 2. Max. superelevation at midspan = 3. Chord offset at midspan (distance from center of track to center of girders) = 0. Other Notes: Tile Notes: 1. Tile size = 1 wide x 1 deep x 2 long with bearing-bearing length = 2. Tile spacing = 3. Tiles dapped for superelevation = 4. Rail plates cutting into ties = 5. Overall tile condition = 0. Approach ties swinging = 7. Approx. number of bad ties = 0. Other Notes: Track Notes:
1 Rail section weight = 1

- Rail section weight = 100
 CWR or jointed rail = 3
- 3. Inner guardrail size/weight (if applicable) =4. Is line of track good =
- 5. Approaches low =

- Walkways/Refuge Bay Notes:

 1. Walkways on bridge = №0
- 2. Walkway condition=

 3. Refuge bays on bridge =

 4. Refuge bay condition =

Other Notes:

TRUSS MEMBER NOTES

General steel condition =

sth end. **Bearing Notes:** Roller Pigo suface conscion Type of bearings = 3. Bearing corrosion = Duts backed of all "" 4. Anchor bolt condition = Common = 5. Expansion bearings functioning properly or frozen = 6. Bearings punching into abutment seat = 火 ⊘

Top Chord Notes:

Other Notes:

- Section loss at critical locations =
- 2. Adequate bracing = \(\frac{1}{6} \sqrt{6}\)
- Cracks at chord splices = ↓ □
- Wear in web pin holes =
- 5. Fasteners condition = Rocats Sent.

Notes (by nodal location established in field):

Inside great losso dand. Edded l'ade on flage L. Joseph 6. Chord cracks = 100 a 7. Condition of splices = Notes (by nodal location established in field):

At 11462 side 2 (Eliss) pithing up to Ye! I shake with with politica 2" no de quento 4" I' had at good

Hanger Notes:

- 1. Section loss in body above floorbeam connection =
- 2. Cracks at upper truss connection, lower row of fasteners =
- 3. Stress concentrations in the form of welds, edge corrosion =
- 4. Accident damage =

Notes (by nodal location established in field):

Ruted concelias

Diagonal Notes:

- 1. Section loss =
- Surfece constan
- 2. Compression/tension members =
- 3. End connection condition =
- 4. Tight (if tension members) =

Notes (by nodal location established in field):

Comp diagonals & midgon tomais strophened with plate sweled mad sold with stilch welds.

end tersion diagrams, has dealterny plate at and and a distalment and

Compression Disports he my polling sixille between angles (Agrical)

End diagonals to the Agriculture of the sixilly and the sixilly are sixilly and the sixilly and the sixilly and the sixilly and the sixil

Post Notes:

- 1. Alignment of post =
- 2. Internal bracing = Good
- 3. Member end condition = Russia

Notes (by nodal location established in field):

End Post Notes:

1. Alignment of post =

2. Internal bracing =

3. Section loss = Non Surgery

Notes (by nodal location established in field):

Many office and top lave horsented brue established in field:

| dea restated top of top without horsented bruce up to 1/8 puffing horsented bruce up to 1/8 puffing and horsented bruce

TRUSS BRACING NOTES

Top Laterals Notes:

- 1. Section loss =
- 2. Connection condition =
- 3. Rod system components =

Notes (by nodal location established in field):

Bottom Laterals Notes:

Section loss =
 Connection condition (truss/stringers) =

3. Rod system components

Notes (by nodal location established in field):

Sway Frame Notes:

1. Section loss = Surface Colorado Section 1.

Sheetens ties & over top don's

2. Connection condition (top chords/verticals) =

3. Fatigue cracks =

4. Rod system components

Notes (by nodal location established in field):

FLOOR SYSTEM NOTES

Floorbeam spacing =

Floorbeam depth = Stringer spacing =

Stringer depth =

Genéral steel condition =

Floorbeam Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Stringer Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

History:

- Original construction year =
- Summary of bridge updates =

Recommended Work:

ITEM#

RECOMMENDED WORK

clan & sill draw holes blom doord

Proposed ended todo Sport. No Jobs's No Night Now on sect

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Lood Condition

DECK TRUSS SPANS

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST # 2000 03:0

CROSSING:

STREAM:

SPAN TYPE:

INSPECTION DATE:

STREAM DEPTH:

LOCATION:

FLOW DIRECTION:

HEIGHT: LENGTH:

INSPECTORS:

DECK TYPE: Open / Ballast

RATING:

NO. OF SPANS:

WALKWAY: (Yes/No - E/W side)

SPAN LENGTH(S):

NO. OF TRACKS:

HANDRAILS: (Yes/No - E/W side)

Inspection Findings:

ABUTMENT NOTES

Type of Abutment Construction =

South:

- Evidence of scour / undermining =
- 2. Drift accumulated =
- 3. Ballast/debris on bearings =
- 4. Vegetation on face/seat =
- 5. Spalling =
- 6. Cracking under bearings =
- 7. Cracking elsewhere =
- 8. Rotation =
- 9. Exposed reinforcing steel =
- 10. Efflorescence =
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

Other Notes:

North:

- 1. Evidence of scour / undernfining =
- 2. Drift accumulated =
- 3. Ballast/debris on bearings =
- 4. Vegetation on face/seat =
- 5. Spalling =
- 6. Cracking under bearings =
- 7. Cracking elsewhere =
- 8. Rotation =
- 9. Exposed reinforcjing steel =
- 10. Efflorescence = j
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

Type of Wingwall Construction =
Type of Backwall Construction =
South Abutment: 1. Undermining = 2. Cracks = 3. Spalling = 4. Leaning = 5. Exposed reinforcing steel = Other Notes:
North Abutment: 1. Undermining = 2. Cracks = 3. Spalling = 4. Leaning = 5. Exposed reinforcing steel = Other Notes:
DECK NOTES
Open deck =
Track Alignment Notes: 1. Bridge on tangent or curve = 2. Max. superelevation at midspan = 3. Chord offset at midspan (distance from center of track to center of girders) = Other Notes:
Tie Notes: 1. Tie size = wide x deep x long with bearing-bearing length = 2. Tie spacing = 3. Ties dapped for superelevation = 4. Rail plates cutting into ties = 5. Overall tie condition = 6. Approach ties swinging = 7. Approx. number of bad ties = Other Notes:
Track Notes: 1. Rail section weight = 2. CWR or jointed rail = 3. Inner guardrail size/weight (if applicable) = 4. Is line of track good = 5. Approaches low = Other Notes: Walkways/Refuge Bay Notes:

V

- 1./ Walkways on bridge = 2. Walkway condition = 3. Refuge bays on bridge =
- 4. Refuge bay condition =

TRUSS MEMBER NOTES General steel condition =	Good	\$r			e e	큣
Bearing Notes: 1. Type of bearings = 1. 2. Full bearing = 1.		ganitir	Charles and the second	(
3. Bearing corrosion = 7))		¥	6		4

4. Anchor bolt condition = OV * washer ship of the same ship of t

6. Bearings punching into abutment seat = Other Notes:

Top Chord Notes:

Other Notes:

1. Section loss at critical locations = No - Surface cast estan

2. Adequate bracing =3. Cracks at chord splices =

4. Wear in web pin holes

5. Fasteners condition = Russia Appel.

Notes (by nodal location established in field):

But flages on blom flage L both sites - from library

Bottom Chord Notes:

1. Section loss at critical locations = No. 2. Eyebar-tightness = 3. Rack-rust at eyebars = 4. Eyebar-section loss = 5. Pins-worn, scored-or-corroded = 6. Chord cracks = No. 2. Condition of splices = Co. Notes (by nodal location established in field):

to characterists

Bet than in fact of bearing the W

Hanger Notes:

- 1. Section loss in body above floorbeam connection =
- 2. Cracks at upper truss connection, lower row of fasteners =
- 3. Stress concentrations in the form of welds, edge corrosion =
- 4. Accident damage =

Notes (by nodal location established in field):

Diagonal Notes:

- 1. Section loss =
- 2. Compression/tension members =
- 3. End connection condition =
- 4. Tight (if tension members) =

Notes (by nodal location established in field):

IT 216 pitting between angle

Post Notes:

- 1. Alignment of post =
- 2. Internal bracing =
- 3. Member end condition =

Notes (by nodal location established in field):

	d Post Notes:						
1.	Alignment of post =	8 8	3 6 1 6	1	<i>t</i>	mark mark	1
2.	Alignment of post = Alignm	towa top	uses inte		700 L 300		í.
3.	Section loss =	000	Alleria Alleria Aggraphia	641	teter a succession	200	
<u>No</u>	tes (by nodal location established in field):				*****	and have	

TRUSS BRACING NOTES

Top Laterals Notes:

- suface concerns only 1. Section loss = 0
- 2. Connection condition = 4004
- 3. Rod-system-components-

Notes (by nodal location established in field):

Bottom Laterals Notes:

- 1. Section loss =
- she corresion only. 2. Connection condition (truss/stringers) = Crood
- 3. Rod_system-components=

Notes (by nodal location established in field):

Sway Frame Notes:

- 1. Section loss =
- 2. Connection condition (top chords/verticals) =
- 3. Fatigue cracks = 🔊 🔊
- 4. Rod system components =

Notes (by nodal location established in field):

FLOOR SYSTEM NOTES

Floorbeam spacing =

Floorbeam depth =

Stringer spacing =

Stringer depth =

General steel condition =

Floorbeam Notes:

- 1. Web corrosion =
- 2. Bottom flange plate/corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate/corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Stringer Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any crácks observed =

Other Notes:

History:

- · Original construction year =
- · Summary of bridge updates =

Recommended Work:

ITEM #1

RECOMMENDED WORK

DECK TRUSS SPANS

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST # 93,0

CROSSING:

STREAM: SPAN TYPE:

INSPECTION DATE: STREAM DEPTH: HEIGHT:
LOCATION: FLOW DIRECTION: LENGTH:

LOCATION: FLOW DIRECTION: LENGTH:
INSPECTORS: DECK TYPE: Open / Ballast RATING:

NO. OF SPANS: WALKWAY: (Yes/No - E/W side) SPAN LENGTH(S):

NO. OF TRACKS: HANDRAILS: (Yes/No - E/W side)

Inspection Findings:

ABUTMENT NOTES

Type of Abutment Construction =

South:

- 1. Evidence of scour / undermining =
- 2. Drift accumulated =
- 3. Ballast/debris on bearings =
- 4. Vegetation on face/seat =
- 5. Spalling =
- 6. Cracking under bearings
- 7. Cracking elsewhere =
- 8. Rotation =
- 9. Exposed reinforcing steel =
- 10. Efflorescence =/
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

Other Notes

North:

- 1. Evidence of scour / undermining =
- 2. Drift accumulated =
- 3. Ballast/debris on bearings =
- 4. Vegetation on face/seat =
- 5. Spalling =
- 6. Cracking under bearings =
- Cracking elsewhere #
- 8. Rotation =
- 9. Exposed reinforcing steel =
- 10. Efflorescence =
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

Other Notes:

BACKWALL/WINGWALL NOTES

Type of Wingwall Construction =	
Type of Backwall Construction =	
South Abutment:	
1. Undermining =	
2. Cracks =	
3. Spalling = 4. Leaning =	
5. Exposed reinforcing steel =	
Other Notes:	
North Abutment:	
1. Undermining =	
2. Cracks =	
3. Spalling = /	
4. Leaning =	
5. Exposed reinforcing steel =	
Other Notes:	
DECK NOTES	
Open deck =	
Open deck 2	
Trook Alignment Notes	
<u>Track Alignment Notes:</u> 1. Bridge on tangent or curve =	
Max. superelevation at midspan =	
Chord offset at midspan (distance from center of track to center of girders) =	
Other Notes:	
<u>Tie Notes:</u>	
1. Tie size = wide xdeep x long with bearing-bearing length =	
2. Tie spacing =	
3. Ties dapped for superelevation =	
4. Rail plates cutting into ties =	
5. Overall tie condition =	
6. Approach ties swinging =	
7. Approx, number of bad ties = Other Notes:	
Other Notes	
Track Notes:	
1. Rail section weight =	
2. CWR or jointed rail =	
3. Inner guardrail size/weight (if applicable) =	
4. Is line of track good =	
5. Approaches low =	
Other Notes:	

Walkways/Refuge Bay Notes: 1. Walkways on bridge = 2. Walkway condition = 3. Refuge bays on bridge = 4. Refuge bay condition =

Other Notes:

TRUSS MEMBER NOTES

General steel condition =

SHE Roller With Roller **Bearing Notes:**

- 1. Type of bearings =
- 2. Full bearing = Y≥S
- 3. Bearing corrosion = Surface co/cosion
- 4. Anchor bolt condition =
- 5. Expansion bearings functioning properly or frozen =
- 6. Bearings punching into abutment seat = 💫 🍮

Other Notes:

Top Chord Notes:

- 1. Section loss at critical locations = A Surface collection.
- 2. Adequate bracing = Yes
- 3. Cracks at chord splices = 🙏
- 4. Wear in web pin hotes =
- 5. Fasteners condition =

Notes (by nodal location established in field):

Bottom Chord Notes:

- 1. Section loss at critical locations =
- 2. Evebar tightness =
- 3. Pack-rust-at-eyebars =
- 4. Eyebar section loss =
- 5. Pins worn, scored-or-correded =
- 6. Chord cracks = N
- 7. Condition of splices = A A A

Notes (by nodal location established in field):

Edhar chard ship

Betor chards Sp163 - beton chard teathers best it a covorion when between better & dreed.

12 corrections such to Spent - de Front & Grating

Hanger Notes:

- 1. Section loss in body above floorbeam connection =
- 2. Cracks at upper truss connection, lower row of fasteners =
- 3. Stress concentrations in the form of welds, edge corrosion =
- 4. Accident damage =

Notes (by nodal location established in field):

Liagonal Notes:

1. Section loss =

2. Compression/tension members =

3. End connection condition =

4. Tight (if tension members) =

Notes (by nodal location established in field):

Notes (by nodal location established in field):

Post Notes:

- 1. Alignment of post = Crock
- 2. Internal bracing =

3. Member end condition = Queted - 0000

Notes (by nodal location established in field):

End Post Notes:

- 1. Alignment of post =

2. Internal bracing =
3. Section loss = Notes (by nodal location established in field):

TRUSS BRACING NOTES

Top Laterals Notes:

1. Section loss =

2. Connection condition = 2 and - good

3. Rod system components =-

Notes (by nodal location established in field):

Bottom Laterals Notes:

suffice collosion only 1. Section loss =

2. Connection condition (truss/stringers) =

3. Rod-system components =

Notes (by nodal location established in field):

Sway Frame Notes:

1. Section loss =

2. Connection condition (top chords/verticals) = Q tocked - great
3. Fatigue cracks = Do

4. Rod system components =

Notes (by nodal location established in field):

FLOOR SYSTEM NOTÉS

Floorbeam spacing =

Floorbeam depth =

Stringer spacing =

Stringer/depth =

General steel condition =

Floorbeam Notes:

- 1. Web corrosion a
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Stringer Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

History:

- Original construction year = Summary of bridge updates =

Recommended Work:

ITEM# 1

RECOMMENDED WORK

Timber Trestles

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST # 98.6 (SOUTH APPROACH

CROSSING: FRENCH LREAL

STREAM: YES

SPANTYPE: TEMBER TRESTLE

INSPECTION DATE: 10/31-11/01

STREAM DEPTH: 2

HEIGHT:

INSPECTION HERWA

· SOUND ALL POSTS @ GROUND LEGIEL

· HAMMER SOUND "

EXTERMOR STRINGERS

· USE SNOWPER TO CHECK UPPER STORT WEST

BETERLOR POTS LSOME

LOCATION: FRENCY (REEK

FLOW DIRECTION: EAST

LENGTH:

INSPECTORS: SEW DBH

DECK TYPE Open / Ballast

RATING: EGO DESJUN

NO. OF SPANS: 40(5A)

WALKWAY: (Yes/No - E/W side)

SPAN LENGTH(S): 15

NO. OF TRACKS:

HANDRAILS: (Yes/No)- E/W side)

Inspection Findings:

END BENT NOTES

Type of End Bent Construction = Timese STIL ON CONCERTS PEDESTAL

- 1. # of piles = -
- 2. Pile diameter =
- 3. Pile eap size = 13 deep x 14 wide

South End (Bent 1):

- 1. Drift accumulated = ዛደጫና ይዩላይኒኒ
- 2. Bent rotation = し。
- 3. Pile cap general condition = کسک
- 4. Pile cap bulging/splitting = んこ
- 5. Pile cap has excessive internal/external decay = ८०
- 6. Pile general condition = -
- 7. Piles have excessive internal/external decay =
- 8. Piles bulging/splitting = -

Other Notes: BURGED UNDER VECETATIONS

North End (Bent TBD):

- Drift accumulated =
- 2. Bent lotation #
- 3. Pile cap general condition =
- 4. Pile cap balging/splitting =
- 5. Pile cap/nas excessive internal/external decay =
- 6. Pile general condition =
- Piles have excessive internal/external decay =
- 8. Pilęś bulging/splittìng =

Other Notes:

INTERMEDIATE BENT NOTES (SOME PILES INAUESSIBLE @ BASE DUE TO BRUSH)

Use timber schematic to mark up section loss in individual piles. (SEE BRIDGE SKETCHES

- 1. # of piles = 5 (でか) 16 (BASE)
- 2. Pile diameter = コーベル
- 3. Pile cap size = 14° deep x 14° wide x 13° Land
- 4. Bents plumb = √
- 5. Signs of pumping piles =
- 6. Signs of scour/erosion = ---
- 7. Posted piles = WATCH INTERES PILES FOR PUMPTING WASER FREIGHT (NOT WELD
- · All PILES ON CONSETT FUTTHERS (TALLER BESTS HAVE ONE PEDESTAL PILE)
- · MUST CHREETE FWITHING CONFEED IN VEGETATION MOSS
- · MINDR SPIERS ON FACE OF BITTIM PILES (SEEN REGULARLY FOR MINDLE)
- · REMOVE ANY DEBITES BRUSH @ BASE OF PILES (MUTSTURE BUILD UP -> SOFTEN PILE)
- · EXTERINE PILES CONNECTED TO FOOTENL BY BUITED ANGLES (PHOTO OF TYP.)

BACKWALL/WINGWALL NOTES

Type of Wingwall Construction = ---

Type of Backwall Construction = Tanber

South End:

- 1. Undermining = ん。
- 2. Cracks = Manue
- 3. Leaning = Do

Other Notes: OVERLARDIN N

DECK NOTES

Ballast / open deck = OPEN

Track Alignment Notes:

- 1. Bridge on tangent or curve = TANWENT
- 2. Max. superelevation at midspan = -

3. Chord offset at midspan (distance from center of track to center of stringers) = ---Other Notes:

Ballast Deck Notes (if applicable): ハA

- 1. Ballast depth =
- 2. Ballast retainer size =
- 3. Floor plate / floor timber condition =
- 4. Deck width =
- 5. Floor timber size =

Other Notes:

- 1. Tie size = 7/2 wide x 7/2 deep x 10 long (ON TIMBER SPANS)
- 2. Tie spacing = ເລັ
- 3. Ties dapped for superelevation = トン SUPER
- 5. Overall tie condition = FAIR
- 6. Approach ties swinging = N₀
- 7. Approx. number of bad ties = SEE BELOW -> **4** 54 = 5. A.
- 8. Method of tie connection = SPALE TO STRUMER

Other Notes:

Track Notes:

- 1. Rail section weight = \$5 LB
- 2. CWR or jointed rail = Tarres
- 3. Inner guardrail size/weight (if applicable) = & LA TORDAN ROLL
- 4. Is line of track good = 45
- 5. Approaches low = No.

Other Notes

NOTES FROM SNOWER (BENTS 21-40)

- 5120,55 = Brow 2" Liss @ B21
- -5P26,55 = 5PLIT ON BOTTOM
- SP27,55 = [] (DHOTO)
- SP30,55 = SPLET ON WEST FACE MID-HELLYT
- SP32/33, 52- BOTTOM SPEET
- ~ 5P33, 53" "

- -Baz, PI; Bak, PI; Bas, P4; B34, P2-4
- B30, P1= SPITT MIDWAY THRU POST (PHOTO)
- B34, PI= " CAP TO STRUT I (PHOTO)
- SOME PILES DO NOT HAVE FULL BEARING CLAP

CAPS:

• 6= 5-EEL

_ B22 B39 = SPET THRU TOP FACE

- B38 - THIN SPEET FULL DEPTH

2010 FREE COMMENTS

- BENT 16-20 CAR FIRE
 - TIES CHANGED OUT NEAR BK, BRO
 - MINTE SURFACE CHARRENCE ON CAPS STEWNERS

6 BH, PI 6" DEED CHEAR (OK)

- · B7, PI CHECK (OK)
- · SP9, SI 2" CHECK (OK)
- · BIZ, PI 5" DEED LIBERY SOUTH FACE (OV)
- · SP13,51 HAS SHAKE @ SOUTH END
- · BIG TOWER BRAKE SALT
- · BIG, PI (NECK ON WEST FACE

Walkways/Refuge Bay Notes:
1. Walkways on bridge = ん。
2. Walkway condition = -
3. Refuge bays on bridge = كاهلة (שאר איז
4. Refuge bay condition = FAIR.
Other Notes:
· MISSING FLOR TIMBER, WEST SIDE, 2" FROM NORM (PHOT.)

SPAN NOTES

- NOTES

 1. # of stringers = 8 (2 PLY)

 2. Stringer size = 17 deep x 9 wide (2 5PAN)
- Out-out of exterior stringers = 5 -3
- 4. General stringer condition = المحادث

Use timber span schematic for marking up section loss in individual stringers where required (مرحم المراح المراح

- 5. Ends of stringers crushing = ん。
- Horizontal shear cracks in stringers = No.
- 7. Fractured stringers = O
- 8. Decay/insect damage = No.

Other Notes:

EXTRA TIMBER MEMBER NOTES (WHERE IN PLACE) (CANNOT JUSPECT JUTERJOR OF PLY)

1. Longitudinal bracing = YES

- 2. Longitudinal bracing size = 4x3
- 3. Longitudinal bracing condition = FAIR EXEM NOVED
- 4. Sway bracing = 4 £5
- 5. Sway bracing size = 4x95
- 6. Sway bracing condition =
- 7. Sash bracing = 4 \$\square\$
- 8. Sash bracing size = کردیک
- Sash bracing condition = ⊢xS
- 10. Mud sills @ bents = אואס, סאגד און א
- 11. Mud sill condition = -

Other Notes:

- · BROKEN X-BRACE BAG-BAT NEAR BOTTOM ON WEST (PHOTO)
- · " BAT-BAS @ 3RD STORY ON WEST (PHOTO)

History:

- Original construction year = বিসাম
- Summary of bridge updates = No TRESTLE UPDATES (DULY MILLE THE CHANGE OUTS)
- TIMBER = DICHUS-FIR (UNSURE OF 15 200 GEOWIN)

Recommended Work:

ITEM# 1

RECOMMENDED WORK

BRIDGE SKETCHES (AS REQUIRED)

MILDLE AST SAIT (STARTS C BIZ)

) جن

4A).TWE_

SAZET BOTOM LEVEL

DPG SPANS: STEEL BENTS

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST # 98.6 (STEEL SPANS

CROSSING:

STREAM: "

SPAN TYPE: DPG

INSPECTION DATE: "

STREAM DEPTH: "

HEIGHT: ._

LOCATION: "

FLOW DIRECTION: \(\infty

LENGTH: _

INSPECTORS: "

DECK TYPE: Open / Ballast

RATING: _

NO. OF SPANS: 3

WALKWAY: (Yes/No - E/W side)

SPAN LENGTH(S): 45',75',45'

NO. OF TRACKS: N

HANDRAILS: (Yes/No - E/W side)

Inspection Findings:

ABUTMENT NOTES

Type of Abutment Construction = ---

South:

- 1. Eyidence of scour / undermining =
- Drift accumulated =
- 3. Ballast/debris on bearings =
- Vegetation on face/seat =
- 5. Spalling =
- 6. Cracking under bearings =
- 7. Cracking elsewhere =
- 8. Rotation =
- 9. Exposed reinforcing steel =
- 10. Effloresøence =
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

Other Notes:

- Evidence of scour / undermining =
- 2. Drift accumulated =
- Ballast/debris on bearings,
- 4. Vegetation on face/seat/
- 5. Spalling =
- 6. Cracking under bearings =
- Cracking elsewhere
- 8. Rotation =
- 9. Exposed reinforcing steel =
- 10. Efflorescence =
- 11. Missing of fractured stones (masonry abutment) =
- 12. Missing/mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

BACKWALL/WINGWALL NOTES

Type of Wingwall Construction = ___

Type of Backwall Construction =

South Abutment:

- 1. Undermixing =
- 2. Cracks/=
- 3. Spalling
- 4. Leaning =
- 5. Exposed reinforcing steel =

Other Notes:

North Abutment:

- 1. Undermiping =
- 2. Cracks
- Spalling ≥
- 4. Learning =
- 5. Exposed reinforcing steel =

Other Notes:

STEEL TOWER BENT NOTES

Tower 1:

- 1. Single or double bent = Dwar Brown
- 2. Tower general condition = FAZD

Misc. Notes (braces, plumbness, etc):

- · BITCH HERSONTAL STRUTS HAVE MORRATE CORRESTAN
- O TREES GROWENK THRU SWISE STRUT & SE-NE STRUT
- · No Rumania

Tower 1, Base of Legs:

- 1. SW Base Notes =
 - ONO MAJOR DEFECTS (2 PUTTS)
- 2. SE Base Notes = გახადა
 - ONO MASSE OFFECTS (1 PHOTO)
- 3. NW Base Notes (if double bent) = βυριέν
 - · CRESSED BLOG PLANE (1 PHOTO)
- 4. NE Base Notes (if double bent) = Non Bures
 - * STEPAN FLOWS FRANT (FUTURES SUPPORTUNG NW BASE SHOULD NOT SCOUR (1 PHOTO)

Tower 1, Top of Legs:

- 1. SW Top Notes = * Prant PEELZNL ...
 - · PITTERLY AS AT SE
- 2. SE TOP Notes = "TOP CULUMN PLATE PITTING ABOUND BENERING PLATE
- 3. NW Top Notes (if double bent) = ANYMOR BOTTS CORRECT
- 4. NE Top Notes (if double bent) = "Bottom FLANGE PITTED ON BOTTOM LEG H' FROM BASE AT NORTH END OF JAN 1 (PHOTO)

Tower 2:

- 1. Single or double bent = ಮಿಂಡ್ ಕೀರ್
- 2. Tower general condition = FACE

Misc. Notes (braces, plumbness, etc):

- · SURFACE RUST ON TOWER LEAS BRAING
- . NORTH BOTTOM STRUT, 16-1/2" CORRUSION ON TOP & BUTTOM FLANGE
- · NW COLUMN HAS YIL" CORRESSON / PITTONL C CONER PARE STRUT TOWER 2, Base of Legs:
- 1. SW Base Notes = " SPALLED CONVETE ON WEST TIDE (1"-3")
- · MINUR SOLE BASE PLATE CORESTIAN
- · LIGHT TOWER LEG CORRESTION OF

PHOTO DRIVER = SW-SE-> NE -> HW

- 2. SE Base Notes = "MOSS COVERED "MINUS SPALL
 - · CURRISTION ON UNDERSIDE OF SOLE PLATE
- 3. NW Base Notes (if double bent) = YIC' CURRESON ON THE WERKS OF BETWIN ANKE . 18 CURRISION PAKETS ON INTERIOR LEW ANGLE
- 4. NE Base Notes (if double bent) = كالعديد ليدر المالية الموادية المالية ا
- · " PACLRUST C SILE PLATE IN SOUTS . /16 SILE PLATE GRESSIN

Tower 2, Top of Legs:

- 1. SW Top Notes = . ACCUMULATION PARTY FLAYES DEBROS NEAR ANCHOR BOX'S (ALL TOWERS)
- 2. SE TOP Notes = * CORDONAN PITTENS AROUND COLDER BASE PLATE & COLUMN TOP PLATE (ALL TOWERS)
- 3. NW Top Notes (if double bent) = + PUOTS SF RUST ACCUMULATING NEAR ANYMOR BUTTS
- 4. NE Top Notes (if double bent) = ・ No DESECTS

Tower 3:

- Single or double bent =
- Tower general condition =

Misc. Notes (braces, plumbness, etc):

Tower 3, Base of Legs:

- SW\Base Nøtes =
- 2. SE Base Notes =
- 3. NW pase Notes (if double bent) =
- 4. NE Base Notes (if double bent) =

Tower, 3, Top of Liegs:

- SW\Top Notes =
- 2. SE Top Notes =
- 3. NW Top Notes (if double bent) =
- 4. NE Top Notes (if double bent) =

Tower 4:

- 1. Single or double bent =
- Tower general condition =

Misc Notes (braces, plumbness, etc):

Tower 4, Base of Legs:

- SW\Base Motes =
- 2. SE Base Notes =
- NW Base Notes (if double bent) =
- NE/Base Notes (if double bent) =

Tower 4, Top of Legs:

1. SW Top Nates =

- 2. SE Top Notes =
- 3. NW Top Notes (if double bent) =
- 4. NE Top Notes (if double bent) =

DECK NOTES

Ballast / open deck =

- Track Alignment Notes:

 1. Bridge on tangent or curve =
- 2. Max. superelevation at midspan =
- 3. Chord offset at midspan (distance from center of track to center of girders) = Other Notes:

Ballast Deck Notes (if applicable): 1. Ballast depth =

- 2. Ballast retainer size =
- 3. Floor plate Afloor timber condition =4. Deck width =

Other Notes:

- 1. Tie size = 10 wide x 16 deep x 13 long
 2. Tie spacing = 16
- 3. Ties dapped for superelevation = --
- 4. Rail plates cutting into ties = -
- 5. Overall tie condition = 602 D
- Approach ties swinging = ——
- 7. Approx. number of bad ties = 6

Other Notes:

Track Notes:

- 1. Rail section weight =
- 2. CWR or jointed rail =
- 3. Inner guardrail size/weight (if applicable) =
- 4. Is line of track good =
- 5. Approaches low =

Other Notes

Walkways/Refuge Bay Notes:

- 1. Walkways on bridge =
- 2. Walkway condition =
- 3. Refuge bays on bridge =
- 4. Refuge bay condition =

Other Notes:

SEE South

SPAN NOTES

Girder spacing = Girder depth = General steel condition =

Span 1 Notes:

- 1. Web corrosion = No; PAZZZ PESZZZ
- Bottom flange plate corrosion = ¬Λωνε
 Bottom flange angle corrosion = ¬Λωνε
- 4. Top flange plate corrosion = Manue
- Lateral bracing system condition = FACE.
- Bearing stiffener condition = ○√
- 7. # of cross frames and spacing = SEE PLANS
- Loose rivets/bolts = Ν₆
- Welds on tension flange = N₀
- 10. Any cracks observed = N_□

Other Notes:

Span 2 Notes:

- 1. Web corrosion =
- Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 3 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 4 Notes:

- 1. Web corrosign =
- 2. Bottom flange plate corrosion =
- 3. Bottom flarige angle corrosion =
- Top flange plate corrosion =
- 5. Lateral braining system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- Welds on tension flange =
- 10. Any cracks observed \=

Other Notes:

WEST WIEDER:

· OK

EAST GOLDER:

- MOUR PETTONS OF VERTICAL LEG OF BOTTOM ANGLE -BOW JUSTICE OUTSIDE
- 0 X-FRIMES OIL
- · PAINT PEELING FROM WEB

WEST WEDER?

- O HIGHLY BUTIST-UP
- " MANDE SURFACE CORROSIDA

EAST WELDER:

SEE

SPAN /

SEE

SPAN 1

· SAME AS WEST

WEST WERDER.

- · LARGE BIRDS NEST 3ºD X-BEKE FROM SOUTH (PHOTOS) (RAYEN)
- · SIMPLY OF SALENES

ENST CORRECT:

- · SUPERE CORRESIDED, MUDE PITTUK ON THETAE OF VERTICAL LEG OF BOTTOM FLANGE ANGLE
- SLIGHT CORROSION OF LETERAL SYSTEM (MIG), LOSS OF LATERAL PLATES

Spaln 5 Notes:

- 1. Web corrosion
- 2. Bottom flange plate corrosion =
- 3. Bottom\flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 6 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate/corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any/cracks observed =

Other Notes:

Span'₹ Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate/corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed

Other Notes:

History:

Original construction year =

Summary of bridge updates =

SEE SOUTH APPR.

Recommended Work:

ITEM#

RECOMMENDED WORK

Timber Trestles

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST # 98.6 (NORTH APPROACH

CROSSING: "

STREAM: "

SPAN TYPE: "

INSPECTION DATE: "

STREAM DEPTH: "

LOCATION: "

FLOW DIRECTION: *

HEIGHT: **** LENGTH: ~

INSPECTORS: «

DECK TYPE: Openy Ballast

RATING: "

NO. OF SPANS: 20

WALKWAY: (Yes/No - E/W side)

SPAN LENGTH(S): ~

NO. OF TRACKS: 5

HANDRAILS: (Yes(No)- E/W side)

Inspection Findings:

END BENT NOTES

Type of End Bent Construction = TEMBER SELL, CAR PROFESTAL

- 1. # of piles = ____
- 2. Pile diameter =
- 3. Pile cap size = 13 deep x 14 wide

South End (Bent 1):/

- 1. Drift accumulated =
- 2. Bent rotation
- 3. Pile cap general condition =
- Pile cap bulging/splitting =
- 5. Pile cap/has excessive internal/external decay =
- 6. Pile general condition =
- 7. Piles have excessive internal/external decay =
- 8. Piles bulging/splitting =

Other Notes:

North End (Bent TBD):

- 1. Drift accumulated =
- 2. Bent rotation = ん。
- 3. Pile cap general condition = OV
- 4. Pile cap bulging/splitting = -
- 5. Pile cap has excessive internal/external decay = -
- 6. Pile general condition =
- 7. Piles have excessive internal/external decay =
- 8. Piles bulging/splitting = -

Other Notes:

INTERMEDIATE BENT NOTES

Use timber schematic to mark up section loss in individual piles.

SEE SOUTH

- 1. # of piles =
- 2. Pile diameter =
- Pile cap size = _ deep x
- 4. Bents plumb =
- 5. Signs of pumping piles =
- 6. Signs of scour/erosion =
- 7. Posted piles =

BACKWALL/WINGWALL NOTES

Type of Wingwall Construction =

Type of Backwall Construction =

South End:

- Undermining =
- 2. Craokę =
- 3. Leáninoù

Other Notes:

North End:

- 1. Undermining = No
- 2. Cracks =MINNR
- 3. Leaning = No

Other Notes: OUECROWN

DECK NOTES

Ballast / open deck =

Track Alignment Notes:

- 1. Bridge on tangent or curve =
- 2. Max. superelevation at midspan =
- 3. Chord offset at midspan (distance from center of track to center of stringers) = Other Notes:

Ballast Deck Notes (if applicable):

- 1. Ballast depth =
- 2. Ballast retainer size =
- 3. Floor plate / floor timber condition =
- 4. Deck width =
- 5. Floor timber size =

Other Notes:

Tie Notes:

- 1. Tie size = ____ wide x ____ deep x ____ long
- 2. Tie spacing =
- 3. Ties dapped for superelevation =
- 4. Rail plates cutting into ties =
- 5. Overall tie condition =
- 6. Approach ties swinging =
- 7. Approx. number of bad ties =
- 8. Method of tie connection =

Other Notes:

Track Notes:

- 1. Rail section weight =
- 2. CWR or jointed rail =
- 3. Inner guardrail size/weight (if applicable) =
- 4. Is line of track good =
- 5. Approaches low =

Other Notes

SEE

SOUTH APPR.

3. Refuge bays on bridge = Sa	EE NOTY PPR. _ wide	CRECK IN BSB, PI ON WEST FACE (SOUND) CLARCY IN BSH, PS ON EAST FACE 2ND STORY BHB, PS APPEARS (RESSOTE HAS LEEGHED OUT TASPECTION METHOD: SAME AS SOUTH APPROACH
5. Ends of stringers crushing = 6. Horizontal shear cracks in stringer. 7. Fractured stringers = 8. Decay/insect damage = Other Notes: EXTRA TIMBER MEMBER NOTES (WH 1. Longitudinal bracing = 2. Longitudinal bracing size = 3. Longitudinal bracing condition = 4. Sway bracing = 5. Sway bracing size = 6. Sway bracing condition = 7. Sash bracing = 8. Sash bracing size =	ERE IN PLACE)	Notes From Snooper: PILES: - SEE SUTTLY GENERAL COMMENTS STRANGERS: - SP41, S1 = CASH @ BUTTOM MADSPAN GLIVELY FROM ERECTION - SP43, S1 = MISSELY LINNIK CORTAGINAL
9. Sash bracing condition = 10. Mud sills @ bents = 11. Mud sill condition = Other Notes: History: Original construction year = Summary of bridge updates Recommended Work:		- SP46 47, SI = 2" DEED (NEW IN) STRINGER (DB4 PHOTOS)
ITEM # 1	RECOMMENDED WORK	•

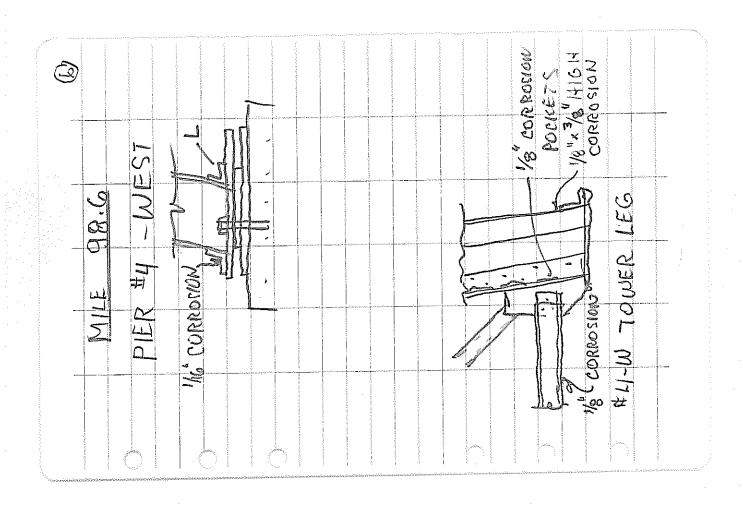
SEE SOUTH APPR. Notes From BASE:

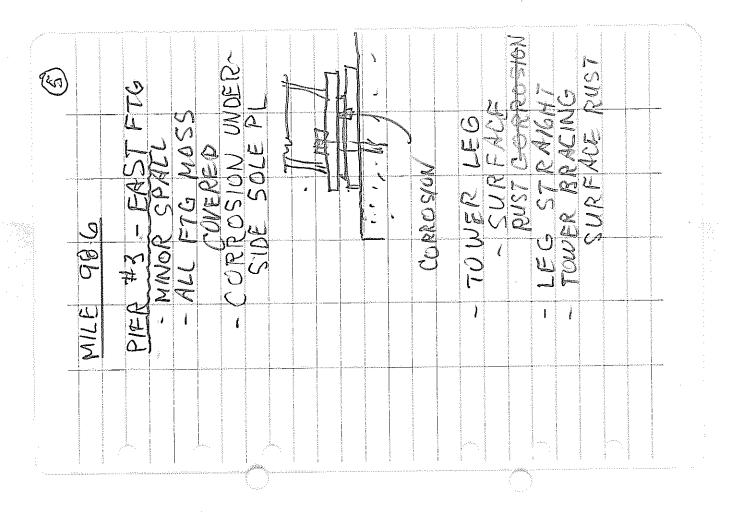
FRENCIA CK - MILE 98.6	BENT #4 - POSTAL 6" DEEP CHECK	Soumor Ot	POST - #7 - 1 - Check SOUNDS - 0 K	SOUMJED STRINGERS 1-4	SOUNDED PILE CAPTEL - WEST	POST # 8-1 D RILEO WEST	Sound Reside CHECK	DRILLED BELOW 2"	
					Wasidi ii waxa taba ii ii ii shara ta	2017 ZERIANIA BASI METANIANA	ana unitari ana ana ana ana ana ana ana ana ana an		

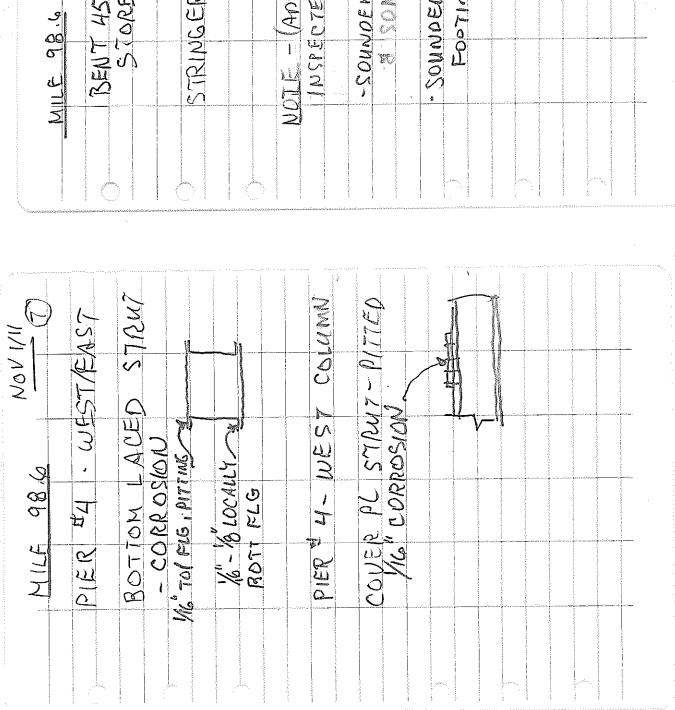
98.6 SHAKE	10E-S			WEST.	3
2 - Z N N N	BOTTOM WESTF	917 JU	10/5 6/1 0	CHECK-	
		2 CAP	TOWER BRACE		
FRENCH CK STRINGER @ SOUTH	POST 15-1 DRILLE	POST 19.	TOWER	P0057	
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<u> </u>	<u>a</u>						
			manifest in the second				 3
6		<u> 2</u> y		FACE			
986 F)	OWNOS-	DIRT CRAC	2nd STOPEY	- EAST FA 74/47 CREO			
K	3	120	10	1 1 1 1 1 1 1 1 1			
NCIH [L]	BRILL 56-5	WEST FA	2057 64~5 FARE -	20ST 48-5 APPEARS LEECHED	d rodzie wyma dwymaniej datad sobola		
FREN	COLUMN TO THE PARTY OF THE PART				Waters of the state of the stat		
Acceptation - major					The state of the s	Summaring and the state of the	

PIER #4 - EASTLEG - STRAIGHT - LIGHT CORROSION	PIER # 4 - EXST BASE PL - ANCHUR BOLT " - SOLE PL - 1/4" CORROSION WITH PITTING	- TOWER LEG - PETET







DPG SPANS: STEEL BENTS

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST #

CROSSING:

STREAM:

SPAN TYPE: DPG

INSPECTION DATE:

STREAM DEPTH:

HEIGHT:

LOCATION:

INSPECTORS: A

FLOW DIRECTION:

LENGTH: RATING:

NO. OF SPANS:

DECK TYPE: Open // Ballast WALKWAY: (Yes/No - E/W side)

SPAN LENGTH(S):

NO. OF TRACKS:

HANDRAILS: (Yes/No #E/W side)

Inspection Findings:

ABUTMENT NOTES

Type of Abutment Construction =

South:

1. Evidence of scour / undermining =

2. Drift accumulated =

3. Ballast/debris on bearings = Ness & Desetedur Allino

4. Vegetation on face/seat =

5. Spalling = N

7. Cracking elsewhere = 10 5

8. Rotation = N

9. Exposed reinforcing steel = 1 2

10. Efflorescence = 1...

11. Missing or fractured stones (masonry abutment) =

12. Missing mortar from joints (masonry abutment) =

13. Evidence of stone movement (masonry abutment) =

Other Notes:

- 1. Evidence of scour / undermining = 1
- 2. Drift accumulated = N 9

5. Spalling =

- Ma 6. Cracking under bearings = 100
- 7. Cracking elsewhere = >>
- 8. Rotation = 🎉 🛷
- 9. Exposed reinforcing steel = 🏄 🖟
- 10. Efflorescence = 🙌 🕙
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

	L/WINGWALL NOTES of Wingwall Construction = of Backwall Construction =
Туре	of Backwall Construction =
1. Ur 2. Cr 3. Sp 4. Le 5. Ex	ndermining = racks = palling = eaning = sposed reinforcing steel = Notes:
1. Ur 2. Cr 3. Sp 4. Le 5. Ex	Abutment: Indermining = Itacks
STEEL TOW	VER BENT NOTES
Tower	
	ngle or double bent =
2. To	wer general condition = රුප්රේ
Misc. I	Notes (braces, plumbness, etc):
	Notes (praces, plumpness, etc): Bellion Early State S
	Petria up to 16" on boston harresone v
<u>Tower</u>	1, Base of Legs:
1. SV	V Base Notes = Geocia
2. SE	Base Notes = 2/4 Secretary Company
2 1/1/	W Rose Notes (if delible bont) =
3. 144	V Base Notes (if double bent) =
4. NE	E Base Notes (if double bent) =
	1, Top of Legs: V Top Notes =
	V Top Notes = Control
	V Top Notes (if double bent) =
4. NE	Top Notes (if double bent) =
Tower	
	gle or double bent =
	wer general condition = (
IVHSC. IV	Notes (braces, plumbness, etc):

Tower 2. Base of Legs:

1. SW Base Notes = Death And Start S

2. SE Base Notes =
3. NW Base Notes (if double bent) =
4. NE Base Notes (if double bent) =
Tower 2. Top of Legs: 1. SW Top Notes = Record Secretary and secretary
2. SE Top Notes =
3. NW Top Notes (if double bent) =
4. NE Top Notes (if double bent) =
Tower 3: 1. Single or double bent = 2. Tower general condition = Misc. Notes (braces, plumbness, etc):
Tower 3, Base of Legs: 1. SW Base Notes =
2. SE Base Notes =
3. NW Base Notes (if double bent) =
4. NE Base Notes (if double bent) =
Tower 3, Top of Legs: 1. SW Top Notes =
2. SE Top Notes = Suface Callos
3. NW Top Notes (if double bent) =
4. NE Top Notes (if double bent) =
Tower 4: 1. Single or double bent = 2. Tower general condition = Misc. Notes (braces, plumbness, etc):
Tower 4, Base of Legs: 1. SW Base Notes =
2. SE Base Notes =
3. NW Base Notes (if double bent) =
4. NE Base Notes (if double bent) =
Tower 4, Top of Legs: 1. SW Top Notes =

- 7 God Siface contocia 2. SE Top Notes = 3. NW Top Notes (if double bent) = 4. NE Top Notes (if double bent) = **DECK NOTES** Ballast / open deck = **Track Alignment Notes:** 1. Bridge on tangent or curve =
 2. Max. superelevation at midspan =
 3. Chord effect

 4. Chord effect

 5. Chord effect

 6. Chord effect

 6. Chord effect

 7. Chord effect

 7. Chord effect

 8. Chord effect

 9. Chord effett

 9. Ch

 - Chord offset at midspan (distance from center of track to center of girders) = Other Notes:

Ballast Deck Notes (if applicable):

- 1. Ballast depth =
- 2. Ballast retainer size =
- 3. Floor plate / floor timber condition =
- 4. Deck width =

Other Notes:

Tie Notes:

- 1. Tie size = 10 wide x 16 deep x 13 long
- 2. Tie spacing =
- 3. Ties dapped for superelevation = No
- 4. Rail plates cutting into ties = 🎎

- 5. Overall tie condition =
 6. Approach ties swinging =
 7. Approx. number of bad ties =
- Other Notes:

Track Notes:

- Rail section weight = BS
 CWR or jointed rail = BS
- 3. Inner guardrail size/weight (if applicable) = 85
- 4. Is line of track good = \ \ e \ \ \
- 5. Approaches low = \sqrt{es}

Other Notes

Walkways/Refuge Bay Notes:

- 1. Walkways on bridge =
- 2. Walkway condition =
- 3. Refuge bays on bridge = | Each | West
- 4. Refuge bay condition =

PAN NOTES	and the second		and the second	
Girder spacing = Girder depth = General steel condition =	71/2"	764	my Same of	
Span 1 Notes: 1. Web corrosion = 2. Bottom flange plate corrosion = 4. Top flange plate corrosion = 5. Lateral bracing system of 6. Bearing stiffener condition 7. # of cross frames and span a	osion = Salada osion = Salada n = Salada ondition = Salada acing = 11 Salada acing = 11 Salada acing = 11 Salada	Anna 11/1	La Company of the Com	
Span 2 Notes: 1. Web corrosion = 2. Bottom flange plate corrosion 3. Bottom flange angle corrosion 4. Top flange plate corrosion 5. Lateral bracing system co 6. Bearing stiffener condition 7. # of cross frames and spa 8. Loose rivets/bolts = 9. Welds on tension flange = 10. Any cracks observed = Other Notes:	osion = 11 ondition = 12 ond 1		and the second s	
Span 3 Notes: 1. Web corrosion = 2. Bottom flange plate corrosion flange angle corrosion flange plate corrosion flange plate corrosion flange plate corrosion flange plate corrosion flange flange from flange flange from flange flang	osion = on =			
Span 4 Notes: 1. Web corrosion = 2. Bottom flange plate corrosion 3. Bottom flange angle corro 4. Top flange plate corrosion 5. Lateral bracing system co 6. Bearing stiffener condition 7. # of cross frames and spa 8. Loose rivets/bolts = 9. Welds on tension flange = 10. Any cracks observed = Other Notes:	sion = Si		La Company of the Com	

Span 5 Notes: 1. Web corrosion = 2. Bottom flange plate corrosion = 4. Top flange plate corrosion = 5. Lateral bracing system condition = 6. Bearing stiffener condition = 7. # of cross frames and spacing = 8. Loose rivets/bolts = 9. Welds on tension flange = 10. Any cracks observed = Other Notes:
Span 6 Notes: 1. Web corrosion = 2. Bottom flange plate corrosion = 3. Bottom flange angle corrosion = 4. Top flange plate corrosion = 5. Lateral bracing system condition = 6. Bearing stiffener condition = 7. # of cross frames and spacing = 8. Loose rivets/bolts = 9. Welds on tension flange = 10. Any cracks observed = Other Notes:
Span 7 Notes: 1. Web corrosion = 2. Bottom flange plate corrosion = 3. Bottom flange angle corrosion = 4. Top flange plate corrosion = 5. Lateral bracing system condition = 6. Bearing stiffener condition = 7. # of cross frames and spacing = 8. Loose rivets/bolts = 9. Welds on tension flange = 10. Any cracks observed = Other Notes:
Original construction year =

Histo

- Summary of bridge updates =

Recommended Work:

ITEM # 1

RECOMMENDED WORK

DPG SPANS: STEEL BENTS

E&N Railway

SECTION: Victoria to Nanaimo

110,7 MILE POST #

CROSSING:

STREAM: BIG QUALICAM

INSPECTION DATE:

STREAM DEPTH:

SPAN TYPE:

FLOW DIRECTION:

HEIGHT:

LOCATION:

INSPECTORS: APIN AL

DECK TYPE Open / Ballast

LENGTH: RATING:

NO. OF SPANS:

WALKWAY: (Yes/No - E/W side)

SPAN LENGTH(S):

NO. OF TRACKS:

HANDRAILS: (Yes/No - E/W side)

Inspection Findings:

ABUTMENT NOTES

Type of Abutment Construction =

South:

- Evidence of scour / undermining = √ ○
- Drift accumulated = → →
- 3. Ballast/debris on bearings = Di HS Moss
- 4. Vegetation on face/seat =
- 5. Spalling = No
- 6. Cracking under bearings = N ○
- 7. Cracking elsewhere = No
- 8. Rotation = 💫 0
- 9. Exposed reinforcing steel = 💫
- 10. Efflorescence = No.
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

Other Notes:

North:

- 1. Evidence of scour / undermining = λ_{0}
- 2. Drift accumulated = んぃ
- 3. Ballast/debris on bearings = & each Later
- 4. Vegetation on face/seat = Noss
- 5. Spalling = ₩o
- Cracking under bearings =
- 7. Cracking elsewhere = No
- 8. Rotation = No
- 9. Exposed reinforcing steel = 100
- 10. Efflorescence =
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) = Other Notes:

BACKWALL/WINGWALL NOTES Type of Wingwall Construction = Conce
Type of Wingwall Construction = Cons
South Abutment: 1. Undermining = \(\to \) 2. Cracks = \(\to \) 3. Spalling = \(\to \) 4. Leaning = \(\to \) 5. Exposed reinforcing steel = \(\to \) Other Notes:
North Abutment: 1. Undermining = 0 o 2. Cracks = 0 o 3. Spalling = 4. Leaning = 5. Exposed reinforcing steel = 10 o Other Notes:
STEEL TOWER BENT NOTES Tower 1: 1. Single or double bent = Double 2. Tower general condition = Good Support of the Condition of the Conditio
Tower 1, Base of Legs: 1. SW Base Notes =
2. SE Base Notes = Croo Suffer correction
3. NW Base Notes (if double bent) = 🗘 🔾
4. NE Base Notes (if double bent) = Gooメノ
Tower 1, Top of Legs: 1. SW Top Notes = Cook.
2. SE Top Notes = Good Suffee correstion & parting on brack
3. NW Top Notes (if double bent) = Goo
3. NW Top Notes (if double bent) = Good 4. NE Top Notes (if double bent) = Good 4. NE Top Notes (if double bent) = Good 4. NE Top Notes (if double bent) = Good
Tower 2: 1. Single or double bent = 2. Tower general condition =

Tower 2, Base of Legs:

1. SW Base Notes =

Misc. Notes (braces, plumbness, etc):

- 2. SE Base Notes = 3. NW Base Notes (if double bent) = Good 4. NE Base Notes (if double bent) = Tower 2, Top of Legs: 1. SW Top Notes = 2. SE Top Notes =
- 3. NW Top Notes (if double bent) =

4. NE Top Notes (if double bent) =

Tower 3:

1. Single or double bent =

2. Tower general condition =

Misc. Notes (braces, plumbness, etc.

Tower 3, Base of Legs:

- 1. SW Base Notes =
- 2. SE Base Notes =
- 3. NW Base Notes (if double bent) =
- 4. NE Base Notes (if double bent) =

Tower 3, Top of Legs:

- 1. SW Top Notes =
- 2. SE Top Notes =
- 3. NW Top Notes (if double bent) =
- 4. NE Top Notes (if double bent) =

Tower 4:

- Single or double bent =
- 2. Tower general condition =

Misc. Note's (braces, plumbness, etc):

Tower 4, Base of Legs:

- 2. SE Base Notes =
- 3. NW Base Notes (if double bent) =
- NE Base Notes (if double bent) =

Tower 4, Top of Legs:

1. SW Top Notes =

- 2. SE Top Notes =
- 3. NW Top Notes (if double bent) =
- 4. NE Top Notes (if double bent) =

DECK NOTES

Ballast / open deck = Open

Track Alignment Notes:

- 1. Bridge on tangent or curve = Curve

 2. Max. superelevation at midspan = Salar Skalar Skal 3. Chord offset at midspan (distance from center of track to center of girders) = Other Notes:

Ballast Deck Notes (if applicable):

- 1. Ballast depth =
- 2. Ballast retainer size =
- 3. Floor plate Liftoor timber condition =
- 4. Deck wjdth =

Other Notes:

Tie Notes:

- 1. Tie size = $\frac{10}{10}$ wide x $\frac{16}{10}$ deep x $\frac{13}{10}$ long
- 2. Tie spacing =
- 3. Ties dapped for superelevation = Some said side
- 4. Rail plates cutting into ties = 🔥 🗸
- 5. Overall tie condition =
- 6. Approach ties swinging = No
- 7. Approx. number of bad ties = 42

Other Notes:

Track Notes:

- 1. Rail section weight =
- 3. Inner guardrail size/weight (if applicable) = 35
- 4. Is line of track good = \\ \(\section \)
- 5. Approaches low = Yes

Other Notes

Walkways/Refuge Bay Notes:

- 1. Walkways on bridge = \(\int_{\alpha} \)
- 3. Refuge bays on bridge = 2 on Dead side

 4. Refuge bay condition = Other Notes:

	AN NOTES S_{1} S_{2} S_{3} S_{4} S_{5} S_{5} S_{7} S_{7} S_{7} S_{7}
SP	
	Girder spacing = 7 2 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
	General steel condition –
	en e
	Span 1 Notes:
	1. Web corrosion = Sandalan
	2. Bottom flange plate corrosion = N i
	3. Bottom flange angle corrosion = NV + + + + + + + + + + + + + + + + + +
	4. Top flange plate corrosion = 1/8 All with the first provide a supply to the supply to the first provide a supply to the first provide a supply to the supply
	5. Lateral bracking system condition = Good
	or boaring ornarios containes = 1 section is
	7. # of cross frames and spacing = 10'9'
	8. Loose rivets/bolts = 9. Welds on tension flange = 10.
	10. Any cracks observed =
	Other Notes:
	Sand Average.
	Other Notes: Span 2 Notes:
	1. Web corrosion =
	 2. Bottom flange plate corrosion = 3. Bottom flange angle corrosion = 4. Top flange plate corrosion = 5. Lateral bracing system condition =
	4. Top flange plate corrosion = 18 full side.
	6. Bearing stiffener condition = 1
	7. # of cross frames and spacing =
	7. # of cross frames and spacing = 8. Loose rivets/bolts = No. 9. Wolds on tension flames = 4000
	9. Welds on tension flange = 100 10. Any cracks observed = 100 Other Nations
	Other Notes:
	Other Notes:
	Span 3 Notes: 1 Web corresion = 5
	 2. Bottom flange plate corrosion = 3. Bottom flange angle corrosion =
	4. Top flange plate corrosion = 1/8 full middle.
	5. Lateral bracing system condition = 6. Bearing stiffener condition = 7. # of cross frames and spacing =
	 6. Bearing stiffener condition = 7. # of cross frames and spacing =
	8. Loose rivets/bolts = 🔾 🗢
	9. Welds on tension flange = 1
	10. Any cracks observed = 1
	Other Notes:
	top house had been been a second to the seco
	Span 4 Notes:
	1. Web corrosion =
	2. Bottom flange plate corrosion = Santale 2014
	3. Bottom flange angle corrosion =
	4. Top flange plate corrosion = 8
	5. Lateral bracing system condition =
	6. Bearing stiffener condition = 2, 4 of cross frames and appearing
	7. # of cross frames and spacing = 8. Loose rivets/botte = 4.8
	8. Loose rivets/bolts = 1009. Welds on tension flange = 100
	10. Any cracks observed = A
	Other Notes:
	· · · · · · · · · · · · · · · · · · ·

Span 5 Notes: 1. Web corrosion = Selection 2. Bottom flange plate corrosion = 11 3. Bottom flange angle corrosion = 12 4. Top flange plate corrosion = 15 5. Lateral bracing system condition = 16 6. Bearing stiffener condition = 17 7. # of cross frames and spacing = 18 8. Loose rivets/bolts = 19 9. Welds on tension flange = 19 10. Any cracks observed = 10 Other Notes: Span 6 Notes: 1. Web corrosion = 19 1. Web corrosion

- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 7 Notes:

- Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

History:

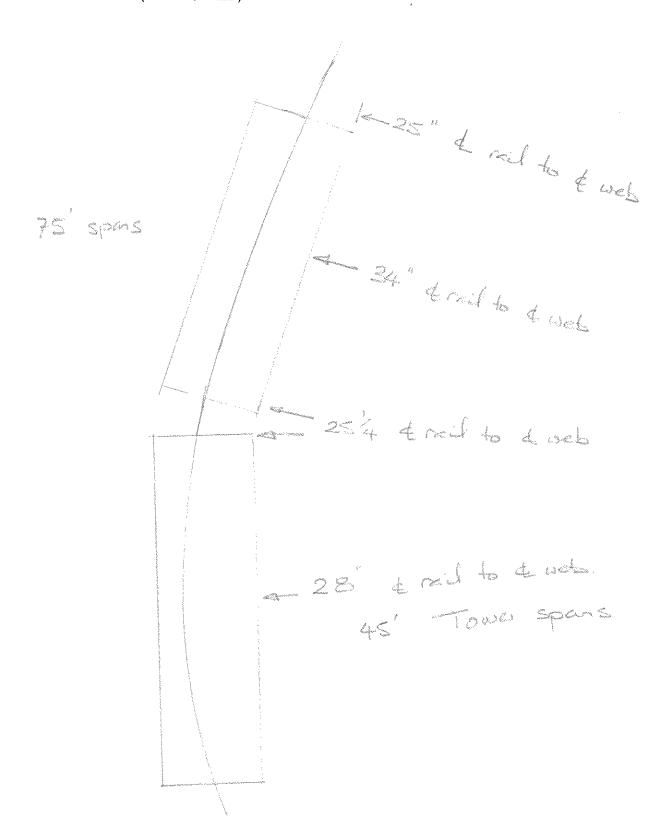
- Original construction year =
- Summary of bridge updates =

Recommended Work:

ITEM#

1

RECOMMENDED WORK



DPG SPANS: CONC. PIERS

E&N Railway

SECTION: Victoria to Nanaimo

113,2 MILE POST

CROSSING: INSPECTION DATE: 10/27/11

STREAM: NILE CK

SPAN TYPE: o Pam

STREAM DEPTH:

HEIGHT:

LOCATION:

FLOW DIRECTION:

LENGTH:

INSPECTORS: APA /AL

DECK TYPE: Open / Ballast

RATING:

NO. OF SPANS:

WALKWAY: (Yes/No E/W side)

SPAN LENGTH(S):

NO. OF TRACKS:

HANDRAILS: (Yes/No - E/W side)

Inspection Findings:

ABUTMENT NOTES

Type of Abutment Construction =

1. Evidence of scour #undermining = 100

2. Drift accumulated =

3. Ballast/debris on bearings = Some School & Arch

4. Vegetation on face/seat = →

Spalling = √ ∅

6. Cracking under bearings = A

7. Cracking elsewhere = 🔑 😂

8. Rotation = 💉

9. Exposed reinforcing steel = 100 kg

10. Efflorescence = 10

11. Missing or fractured stones (masonry abutment) =

12. Missing mortar from joints (masonry abutment) =

13. Evidence of stone movement (masonry abutment) = 1

Other Notes:

- 1. Evidence of scour / undermining = 👫 🖥
- 3. Ballast/debris on bearings = \$\frac{1}{2} \text{ Vegetation on foce/scripts}
- 4. Vegetation on face/seat = 🔑 🕵 💲
- Spalling = ∧
- 6. Cracking under bearings = 🎎
- 7. Cracking elsewhere = 1/2
- 8. Rotation =
- 9. Exposed reinforcing steel =
- 10. Efflorescence = 🔌 🦔 🔻
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

Other Notes:

BACKWALL/WINGWALL NOTES

South Abutment:

- 1. Undermining = No
- 2. Cracks = べっ
- 3. Spalling = 🔥
- 4. Leaning = 🚧 🌣
- 5. Exposed reinforcing steel =

Other Notes:

North Abutment:

- 1. Undermining = 🛝
- 2. Cracks =
- 3. Spalling =
- 4. Leaning = 🍑
- 5. Exposed reinforcing steel = 100

Other Notes:

CONCRETE PIER NOTES

Pier 1:

Type of Construction =

- 1. Undermining = 2. Cracks = C
- 3. Spalling = No bla Sw cand 1/2 has 6" across
- 4. Leaning =
- 5. Exposed reinforcing steel = 💫 💍

Other Notes:

Pier 2:

Type of Construction = Construction condition and we see forest the

- 1. Undermining =
- 2. Cracks =
- 3. Spalling =
- 4. Leaning =
- 5. Exposed reinforcing steel =

Other Notes:

Pier 3:

Type of Construction =

- 1. Undermining =
- 2. Cracks =
- 3. Spalling =
- 4. Leaning =
- 5. Exposed reinforcing steel =

Other Notes:

<u>Pier 4:</u>

Type of Construction =

- 1. Undermining =
- 2. Cracks =
- 3. Spalling =
- 4. Leaning =
- 5. Exposed reinforcing steel =

Other Notes:

DECK NOTES

Ballast / open deck =



Track Alignment Notes:

- 1. Bridge on tangent or curve =
- 2. Max. superelevation at midspan =
- 3. Chord offset at midspan (distance from center of track to center of girders) = Other Notes:

Ballast I	Deck	Notes	(if	a	p	plicable	١:

- 1. Ballast depth =
- 2. Ballast retainer size =
- 3. Floor plate / floor timber condition =
- 4. Deck width =

Other Notes:

ı	ì	e	Ν	ot	es	;

- 1. Tie size = 10 wide x 16 deep x 13 long
- 3. Ties dapped for superelevation = 4. Rail plates cutting into the first state.
- 4. Rail plates cutting into ties = 1
- 5. Overall tie condition =
- 6. Approach ties swinging = ∧ >
- 7. Approx. number of bad ties =

Other Notes:

Track Notes:

- 1. Rail section weight =
- 2. CWR or jointed rail = ♦
- 3. Inner guardrail size/weight (if applicable) = 🥞 ≲
- 4. Is line of track good = \(\frac{1}{160} \)
- Approaches low =

Other Notes

Walkways/Refuge Bay Notes:

- 1. Walkways on bridge = No
- 2. Walkway condition =
- 3. Refuge bays on bridge =
- 4. Refuge bay condition =

Other Notes:

por missing I place & I hendreit loose posts

SPAN NOTES

Girder spacing =

Girder depth =

General steel condition =

Span 1 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
 6. Bearing stiffener condition =
 7. # of cross frames and spacing =

- 8. Loose rivets/bolts =
- 9. Welds on tension flange =

1 -2" of for which to 1" or which

10. Any cracks observed =	
Other Notes:	
Manuscrimon de la film	
Span 2 Notes:	
1. Web corrosion = Surface	
2. Bottom flange plate corrosion = Almos of the state of	
3. Bottom flange angle corrosion = Apply 16' oss (' high calsic	
4. Top flange plate corrosion =	44 (6 Y) ?*
5. Lateral bracing system condition = 5.	
6. Bearing stiffener condition -	
7. # of cross frames and spacing = 60 12 2" 10 6" 11 2" 11 5" 2	121
8. Loose rivets/bolts =	
9. Welds on tension flange = 100	and from the same
10. Any cracks observed = No.	
Other Notes:	
	0
Span 3 Notes:	
1. Web corrosion = 2. Rottom flance plate corrosion = State & State Public in Plance	**
2. Bottom flange plate corrosion =	M
3. Bottom flange angle corrosion = Top flange plate corresion =	
4. Top liance plate corresion –	Designed to
5. Lateral bracing system condition = 6. Bearing stiffener condition =	-3400000
o. Doaring Sanoral Condition	dar.
7. # of cross frames and spacing =	F C MAGRIM
8. Loose rivets/bolts = 100	And the second s
9. Welds on tension flange = So	V
10. Any cracks observed = 10.	A 1
Other Notes:	
Span 4 Notes:	
1. Web corrosion =	
2. Bottom flange plate corrosion =	
3. Bottom flange angle corrosion =	
4. Top flange plate corrosion =	n kaka
5. Lateral bracing system condition =	W ,
6. Bearing stiffener condition =	adjoint
7. # of cross frames and spacing =	
8. Loose rivets/bolts =	**
9. Welds on tension flange =	
10. Any cracks observed =	
Other Notes:	
Span 5 Notes:	
1. Web corrosion =	
2. Bottom flange plate corrosion =	
3. Bottom flange angle corrosion =	
4. Top flange plate corrosion =	
5. Lateral bracing system condition =	
6. Bearing stiffener condition =	er Gestati
7. # of cross frames and spacing =	
8. Loose rivets/bolts =	

9. Welds on tension flange = 10. Any cracks observed =

DPG SPANS: CONC. PIERS

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST# / 4 2

1941 Jeg 1

CROSSING:

STREAM: GOLCE SHE

DAG SPAN TYPE:

INSPECTION DATE: VO/24/11

STREAM DEPTH:

HEIGHT:

LOCATION: Aug 844

FLOW DIRECTION:

LENGTH:

INSPECTORS: APU/AL

DECK TYPE: Open / Ballast

RATING:

NO. OF SPANS:

WALKWAY: (Yes/No - E/W side)

SPAN LENGTH(S):

NO. OF TRACKS:

HANDRAILS: (Yes/No) E/W side)

Inspection Findings:

ABUTMENT NOTES

Type of Abutment Construction =

- 1. Evidence of scour / undermining = Rip Rep placed in Rock of about 2. Drift accumulated = ...
- 2. Drift accumulated = K)
- 3. Ballast/debris on bearings = No
- 4. Vegetation on face/seat = Yes moss / fews
- 5. Spalling = ₩o
- 6. Cracking under bearings = No
- 7. Cracking elsewhere = No
- 8. Rotation = 📣 👵
- 9. Exposed reinforcing steel = ⋏Ůø
- 10. Efflorescence = 100 p
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

Other Notes:

- 1. Evidence of scour / undermining = 2. Ray day 5/10 2142
- 2. Drift accumulated = 📣 5
- 3. Ballast/debris on bearings = № a
- 4. Vegetation on face/seat = 4 0 5 / Cons
- 5. Spalling = →
- 6. Cracking under bearings = 400
- 7. Cracking elsewhere = 💫
- 8. Rotation = 💫
- 9. Exposed reinforcing steel = N
- 10. Efflorescence = 🔌 🦡
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

BACKWALL/WINGWALL NOTES

Type of Wingwall Construction =

Type of Backwall Construction =

South Abutment:

- Undermining =
- 2. Cracks = No
- 3. Spalling = ↓∫ ͽ
- 4. Leaning = 🔊
- 5. Exposed reinforcing steel = 🗘

B/D Establish

ni o

Other Notes:

North Abutment:

- 1. Undermining = No
- 2. Cracks = Do
- 3. Spalling = 🔎 🤉
- 4. Leaning = 📣
- 5. Exposed reinforcing steel = 1

Other Notes:

CONCRETE PIER NOTES

Pier 1:

Type of Construction =

- 1. Undermining =
- 2. Cracks =
- 3. Spalling =
- 4. Leaning =
- 5. Exposed reinforcing steel =

Other Notes:

Pier 2:

Type of Construction =

- 1. Undermining =
- 2. Cracks =
- 3. Spalling =
- 4. Leaning =
- 5. Exposed reinforcing steel =

Other Notes:

Pier 3:

Type of Construction =

- 1. Undermining =
- 2. Cracks =
- 3. Spalling =
- 4. Leaning =
- 5. Exposed reinforcing steel =

Other Notes:

<u> Pier 4:</u>

Type of Construction =

- 1. Undermining =
- 2. Cracks =
- 3. Spalling =
- 4. Leaning =
- 5. Exposed reinforcing steel =

DECK NOTES

Ballast / open deck = Open

Track Alignment Notes:

- 1. Bridge on tangent or curve =
- 2. Max. superelevation at midspan =
- 3. Chord offset at midspan (distance from center of track to center of girders) = Other Notes:

Ballast Deck Notes (if applicable):

- 1. Ballast depth = /
- 2. Ballast retainer size =
- 3. Floor plate / floor timber condition =
- 4. Deck width =

Other Notes:

Tie Notes:

- 1. Tie size = $\frac{10}{10}$ wide x $\frac{14}{10}$ deep x $\frac{13}{10}$ long
- 2. Tie spacing = 1 (
- 3. Ties dapped for superelevation = ► 3
- 4. Rail plates cutting into ties = ∆o
- 5. Overall tie condition =
- 6. Approach ties swinging = No
- 7. Approx. number of bad ties = (

Other Notes:

Track Notes:

- 1. Rail section weight = S

- 4. Is line of track good = $\frac{1}{2}$
- 5. Approaches low =

Other Notes

Walkways/Refuge Bay Notes:

- Walkways on bridge, ∠
- 2. Walkway condition =
- 3. Refuge bays on bridge =
- 4. Refuge bay condition =

Other Notes:

SPAN NOTES

Girder spacing = 10 Girder depth = 3 2 2 2 General steel condition = 6

Span 1 Notes:

- 1. Web corrosion = 1/2 State |
 2. Bottom flange plate corrosion = 1/2 State |
 3. Bottom flange angle corrosion = 1/2 State |
 4. Top flange plate corrosion = 1/2 State |
 5. Lateral bracing system condition = 2 state |
 6. Bearing at 150 state |
 7. Bearin
- 6. Bearing stiffener condition = 4004
- 7. # of cross frames and spacing = 4 @ 9 4

8. Loose rivets/bolts =
9. Welds on tension flange =
10. Any cracks observed =
Other Notes:

Span 2 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 3 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 4 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 5 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Timber Trestles

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST # 1195

CROSSING: 114

STREAM: COOK CK STH

SPAN TYPE:

Thosa

INSPECTION DATE:

STREAM DEPTH: FLOW DIRECTION:

HEIGHT: LENGTH:

2.4

LOCATION: Muo Bay INSPECTORS: APA /AV

DECK TYPE: Open / Ballast

RATING:

NO. OF SPANS:

NO. OF TRACKS:

WALKWAY: (Yes/No - E/W side) HANDRAILS: (Yes/No)- E/W side) SPAN LENGTH(S):

1028

Inspection Findings:

SITE IN ORDER

1932 16426 x 26

END BENT NOTES

Type of End Bent Construction =

- 1. # of piles =
- 2. Pile diameter =
- 3. Pile cap size = ____deep x ____wide

South End (Bent 1):

- 1. Drift accumulated =
- 2. Bent rotation =
- 3. Pile cap general condition =
- 4. Pile cap bulging/splitting =
- 5. Pile cap has excessive internal/external decay =
- 6. Pile general condition =
- 7. Piles have excessive internal/external decay =
- 8. Piles bulging/splitting =

Other Notes:

North End (Bent TBD):

- 1. Drift accumulated =
- 2. Bent rotation =
- 3. Pile cap general condition =
- 4. Pile cap bulging/splitting =
- 5. Pile cap has excessive internal/external decay =
- 6. Pile general condition =
- 7. Piles have excessive internal/external decay =
- 8. Piles bulging/splitting =

Other Notes:

INTERMEDIATE BENT NOTES

Use timber schematic to mark up section loss in individual piles.

- 1. # of piles =
- 2. Pile diameter =
- 3. Pile cap sîze = ____deep x ____wide
- 4. Bents plumb =
- 5. Signs of pumping piles =
- 6. Signs of scour/erosion =
- 7. Posted piles =

BACKWALL/WINGWALL NOTES Type of Wingwall Construction =	Gara	A	Alexander
Type of Backwall Construction =	Conse		
South End: 1. Undermining = Yes 2. Cracks = 3. Leaning =			

Cone good and.

North End:

Other Notes:

- 1. Undermining = 🕠 a
- 2. Cracks = 💫 🔊
- 3. Leaning = 🛝

Other Notes:

DECK NOTES

Ballast / open deck =

Track Alignment Notes:

- 3. Chord offset at midspan (distance from center of track to center of stringers) = Other Notes:

Ballast Deck Notes (if applicable):

- 1. Ballast depth =
- 2. Ballast retainer size =
- 3. Floor plate / floor timber condition =
- 4. Deck width =/
- 5. Floor timber size =

Other Notes:

- 1. Tie size = 2 wide x 2 deep x 12 long
 2. Tie spacing =
- 3. Ties dapped for superelevation = 📣
- 4. Rail plates cutting into ties = 100
- 5. Overall tie condition = Q6. Approach ties swinging = N
- 7. Approx. number of bad ties = 12
 8. Method of tie connection = Spitch U have grand Other Notes:

Track Notes:

- 1. Rail section weight = \$5
 2. CWR or jointed rail = \$\text{CWR}\$
- 3. Inner guardrail size/weight (if applicable) = X
- 4. Is line of track good =

 5. Approaches low =

 Char Notes

Walkways/Refuge Bay Notes:
1. Walkways on bridge =
2. Walkway condition =
3. Refuge bays on bridge =
4. Refuge bay condition =
Other Notes:
SPAN NOTES
1. # of stringers = 2 sets # 4 4
2. Stringer size = 25% deep x wide
3. Out-out of exterior stringers =
4. General stringer condition = Coop 57 /2
then the home many material the second secon
5. Ends of stringers crushing = 10
6. Horizontal shear cracks in stringers = 1
7. Fractured stringers = 100 Suits 20 S
8. Decay/insect damage =
Other Notes:
EXTRA TIMBER MEMBER NOTES (WHERE IN PLACE)
1. Longitudinal bracing = ×
2. Longitudinal bracing size = 🗡
3. Longitudinal bracing condition = 📡
4. Sway bracing = ×
5. Sway bracing size ≃ ∀
6. Sway bracing condition =
7. Sash bracing = ×
8. Sash bracing size = 🤝
Cook hypothesis and the second
10. Mud sills @ bents = 6" deep +10 with @ above -10
11. Mud sill condition =
Other Notes:

History:

- Original construction year =
- Summary of bridge updates =

Recommended Work:

Other Notes:

ITEM#

RECOMMENDED WORK

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST #1.30 12012

CROSSING:

STREAM: LOSSEL

SPAN TYPE:

- LDPG-

INSPECTION DATE: \O/ *** LOCATION:

STREAM DEPTH: \$ 5 -4 FLOW DIRECTION: F

HEIGHT: LENGTH: 7

INSPECTORS: APA/AL

DECK TYPE: Open / Ballast

RATING:

NO. OF SPANS:

WALKWAY: (Yes/No - E/W side)

SPAN LENGTH(S): 34

NO. OF TRACKS:

HANDRAILS: (Yes/No)- E/W side)

Inspection Findings:

ABUTMENT NOTES

Type of Abutment Construction =

- 2. Drift accumulated =
- 3. Ballast/debris on bearings = Mina ballast/
- 4. Vegetation on face/seat =
- 5. Spalling = ショ
- 6. Cracking under bearings = ມູ່ນ
- 7. Cracking elsewhere = X ⊘
- 8. Rotation = No
- 9. Exposed reinforcing steel = 🐧
- 10. Efflorescence = 🔬 🕥
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

Other Notes:

- 1. Evidence of scour / undermining = 1
- 2. Drift accumulated =
- 3. Ballast/debris on bearings = 3 5 4
- Vegetation on face/seat = ↑
- 5. Spalling = 🕺 🤍
- 6. Cracking under bearings = 7. Cracking elsewhere =
- 8. Rotation =
- Exposed reinforcing steel = → → →
- 10. Efflorescence = 165 (2)
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

BACKWALL/WINGWALL NOTES Type of Wingwall Construction = Type of Backwall Construction = South Abutment: 1. Undermining = 🖏 2. Cracks = 3. Spalling = 4. Leaning = 5. Exposed reinforcing steel = Other Notes: North Abutment: 1. Undermining = 2. Cracks = 3. Spalling = 4. Leaning = 5. Exposed reinforcing steel Other Notes: **DECK NOTES** Ballast / open deck = 0 **Track Alignment Notes:** Bridge on tangent or curve = Max. superelevation at midspan = 3. Chord offset at midspan (distance from center of track to center of girders) = Other Notes: Ballast Deck Notes (if applicable): 1. Ballast depth = / 2. Ballast retainer size = 3. Floor plate / floor timber condition = 4. Deck width = Other Notes: 1. Tie size = 10 wide x 16 deep x 2 long with bearing-bearing length = 12 11 2. Tie spacing = 1441 2. Tie spacing = | + + ! 3. Ties dapped for superelevation = No 4. Rail plates cutting into ties = 🛝 ∴ 5. Overall tie condition = Approach ties swinging = △

7. Approx. number of bad ties =

8. Section loss to be used in rating flexural ties = 0 - 5 %

Other Notes:

1. Size of angles = 5/4 pine 2. Overall condition = 3. Cracks evident = 4. Bearing length of tie on angle = 4
Other Notes:

Track Notes: 1. Rail section weight = 💡 🖇 2. CWR or jointed rail = 3. Inner guardrail size/weight (if applicable) = 🔏 🛇 4. Is line of track good = 5. Approaches low = \\ Other Notes Walkways/Refuge Bay Notes: 1. Walkways on bridge = 2. Walkway condition = Refuge báys on bridge = Refuge bay condition = Other Notes: **SPAN NOTES** Girder spacing = 13 Girder depth = 5 5 Colors General steel condition = Surface Colors Bearing Notes: 1. Type of bearings = St. Tocks by the state of the st Web corrosion = Bottom flange plate corrosion = Bottom flange angle corrosion = 4. Top flange plate corrosion = Supplied to the supplied to th 6. Bearing stiffener condition = 7. # of cross frames and spacing = 8. Loose rivets/bolts = 10000 9. Welds on tension flange = 🌲 10. Any cracks observed = 10. Other Notes: Original construction year = Summary of bridge updates =

History:

Recommended Work:

ITEM# 1

RECOMMENDED WORK

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST #1:30

CROSSING: 122.0 INSPECTION DATE: 10/24/1

STREAM: いるとれっつ LOCATION: MUC GA

STREAM DEPTH: FLOW DIRECTION:

HDPG SPAN TYPE: **HEIGHT:**

LENGTH:

RATING:

DECK TYPE: Open / Ballast

WALKWAY: (Yes/No - E/W side)

SPAN LENGTH(S):

1 a 66

NO. OF SPANS: NO. OF TRACKS:

HANDRAILS: (Yes/No - E/W side)

Inspection Findings:

INSPECTORS: AND IAL

ABUTMENT NOTES

Type of Abutment Construction =

- 1. Evidence of scour / undermining = Yes to watch
- 2. Drift accumulated =
- 3. Ballast/debris on bearings = 🍇 🔉
- 4. Vegetation on face/seat =
- 5. Spalling = 💫 💍
- 6. Cracking under bearings =
- 7. Cracking elsewhere = No
- 8. Rotation = 🛝
- 9. Exposed reinforcing steel = △ ○
- 10. Efflorescence = No New Cod
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) = Other Notes:

- 1. Evidence of scour / undermining =
- 2. Drift accumulated =
- 3. Ballast/debris on bearings = 🙏 🐧
- 5. Spalling = No
- 6. Cracking under bearings = ∧ ∫ ○
- 7. Cracking elsewhere = 😂
- 8. Rotation = 🛵 🦠
- 9. Exposed reinforcing steel = N
- 10. Efflorescence = 1
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) = Other Notes:

BACKWALL/WINGWALL NOTES Type of Wingwall Construction =
Type of Backwall Construction =
South Abutment: 1. Undermining = \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \\ \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\)
North Abutment: 1. Undermining = No 2. Cracks = No 3. Spalling = No 4. Leaning = No 5. Exposed reinforcing steel = No Other Notes:
DECK NOTES Ballast / open deck = Dpgo
Track Alignment Notes: 1. Bridge on tangent or curve = 2. Max. superelevation at midspan = 3. Chord offset at midspan (distance from center of track to center of girders) = Other Notes:
Ballast Deck Notes (if applicable): 1. Ballast depth = 2. Ballast retainer size = 3. Floor plate I floor timber condition = 4. Deck width = Other Notes:
Tie Notes: 1. Tie size = 10 wide x 6 deep x 3 long with bearing-bearing length = 2. Tie spacing = 3. Ties dapped for superelevation = 10 4. Rail plates cutting into ties = 10 5. Overall tie condition = 10 6. Approach ties swinging = 10 6. Approx. number of bad ties = 10 8. Section loss to be used in rating flexural ties = 10 70 Other Notes:

Tie Support Angles (if applicable):

1. Size of angles = 5/2 3/2

2. Overall condition = 3. Cracks evident =

4. Bearing length of tie on angle =

Track Notes: 1. Rail section weight = 2. CWR or jointed rail = 3. Inner guardrail size/weight (if applicable) = 4. Is line of track good = 5. Approaches low = Other Notes	
Walkways/Refuge Bay Notes: 1. Walkways on bridge = 2. Walkway condition = 3. Refuge bays on bridge = 4. Refuge bay condition = Other Notes:	
SPAN NOTES Girder spacing = 13	
Bearing Notes: 1. Type of bearings = 2. Full bearing = 3. Bearing corrosion = 10 4. Anchor bolt condition = 5. Expansion bearings functioning properly or frozen 6. Bearings punching into abutment seat = Other Notes:	
Span 1 Notes: 1. Web corrosion = 2. Bottom flange plate corrosion = 3. Bottom flange angle corrosion = 4. Top flange plate corrosion = 5. Lateral bracing system condition = 6. Bearing stiffener condition = 7. # of cross frames and spacing = 8. Loose rivets/bolts = 9. Welds on tension flange = 10. Any cracks observed = Other Notes:	

- 7. # of cross frames and spacing = 📑 😩 🗯
- 8. Loose rivets/bolts = 🔌
- 9. Welds on tension flange =
- 10. Any cracks observed =

History:

- Original construction year =
- Summary of bridge updates =

Recommended Work:

ITEM# 1

DPG SPANS: CONC. PIERS

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST # 128,0

CROSSING:

STREAM: 6 0

SPAN TYPE: DPG

INSPECTION DATE: 10/27/11

STREAM DEPTH:

HEIGHT:

221

LOCATION:

FLOW DIRECTION:

LENGTH:

INSPECTORS: AND IAL

DECK TYPE: Open / Ballast

RATING:

NO. OF SPANS:

WALKWAY: (Yes/No)- E/W side)

SPAN LENGTH(S):

NO. OF TRACKS:

HANDRAILS: (Yes/No)- E/W side)

Inspection Findings:

ABUTMENT NOTES

Type of Abutment Construction =

- 1. Evidence of scour / undermining =
- 2. Drift accumulated =
- 3. Ballast/debris on bearings =
- 4. Vegetation on face/seat = NOSC & Leave
- 5. Spalling = ♪♪♡
- 6. Cracking under bearings = No
- 7. Cracking elsewhere = 1000
- 8. Rotation = ♠ 🌣
- 9. Exposed reinforcing steel = 100
- 10. Efflorescence =
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

Other Notes:

- 1. Evidence of scour / undermining = 🔊
- 2. Drift accumulated =
- 3. Ballast/debris on bearings = ⅓a≤ and a fat
- 4. Vegetation on face/seat =
- 5. Spalling = 100
- 6. Cracking under bearings = N
- 7. Cracking elsewhere = 100
- 8. Rotation =
- No 9. Exposed reinforcing steel =
- 10. Efflorescence =
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

Other Notes:

BACKWALL/WINGWALL NOTES

. 4	South Abutment:	ra es tradelación publicares e employes es este del deproprieta de la estada en estada e estada e el estado de	and production on the control of the
U٥	1. Undermining =	034 had	
NO	2. Cracks = Condition It	Section 1 to the section of the sect	
'N/P	3. Spalling = 4. Leaning = 1.	tre trienas Francistificada (1805), ap	and the state of t
No.	Exposed reinforcing steel =	a sa a farangan mangan kankalan bana kankalan a sa a kankalan baha sa ka	managanana sestembahan kepaganan mengenakan kemengan kepagan kepanan dan mengan kemengan berasa sebagai berasa
	Other Notes:	des grand Children de Sara et al	

	North Abutment:		
	1. Undermining = へつう		
	2. Cracks = A	10 A	
	3. Spalling = A	** Total Scory.	
	4. Leaning = 🔊		
	5. Exposed reinforcing steel 🕬		
	Other Notes.		
CONC	RETE PIER NOTES	22-23-1	
	Pier 1:		
		أسيا	,
	Type of Construction = Construction	for access tills	ada - Cyray place
	2. Cracks =		Nes de par
	3. Spalling = Lest side of com		
	4. Leaning = 🍆 🚵		
	5. Exposed reinforcing steel = 🕬		
	Other Notes:		
	Pier 2:		
	Type of Construction = 1. Undermining = 2. Cracks = 4.		
	1. Undermining =		And
	2. Cracks = 2 4 4 5 5		
	3. Spalling =		
	 Leaning = Exposed reinforcing steel = 		5.
	Other Notes:	TOWARD BINS	1
•	04101.110100.		
	<u> Pier 3:</u>		
	Type of Construction =		
	1. Undermining =		
	2. Cracks =		
	3. Spalling =		
	4. Leaning = /		
	5. Exposed reinforcing steel = Other Notes:		
-	Other Notes.		
1	<u> Pier 4:</u>		
-	Type of Construction =		
	1. Undermining =		
	2. Cracks =		
	3. Spålling =		
	4. Leaning =		
	5. Exposed reinforcing steel =		
<u>(</u>	Other Notes:		

DECK NOTES

Ballast / open deck =

Bridge on tangent or curve = Max. superelevation at midspa Chord offset at midspan (distar		trook to contar of girdors) =	fem	
Other Notes:	ice irom center of	track to center of girders) –		
Processor	garaginin di dada da d			27 WIS.
Ballast Deck Notes (if applicable 1. Ballast depth = 2. Ballast retainer size = 3. Floor plate / floor timber conditi 4. Deck width = Other Notes:		Selection of the second of the	Nh End	And the state of t
Tie Notes: 1. Tie size = 10 wide x 12 dee 2. Tie spacing = 10 3. Ties dapped for superelevation 4. Rail plates cutting into ties = 10 5. Overall tie condition = 10 6. Approach ties swinging = 10 7. Approx. number of bad ties = 10 Other Notes:	= 10 Vo	The proposed was always of a substraction of the substraction of t	Justin 2011.	The second section of the sect
Track Notes: 1. Rail section weight = % 2. CWR or jointed rail = 3. Inner guardrail size/weight (if all 4. Is line of track good = 5. Approaches low = Other Notes	pplicable) =			
Walkways/Refuge Bay Notes: 1. Walkways on bridge = 2. Walkway condition = 3. Refuge bays on bridge = 4. Refuge bay condition = Other Notes:			- 6 4	
SPAN NOTES Girder spacing = Girder depth = General steel condition =	9/2"	14. 8. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2.		
Span 1 Notes: 1. Web corrosion = 2. Bottom flange plate corrosion = 3. Bottom flange angle corrosion = 4. Top flange plate corrosion = 5. Lateral bracing system condition 6. Bearing stiffener condition = 7. # of cross frames and spacing = 8. Loose rivets/bolts = 9. Welds on tension flange =	n = 320Å	ABOY		

Track Alignment Notes:

10. Any cracks observed = Do Other Notes: Snan 2 Notes

Span z Notes:	
1. Web corrosion =	: Strikau

2. Bottom flange plate corrosion =

3. Bottom flange angle corrosion =

4. Top flange plate corrosion =

5. Lateral bracing system condition = \sim

6. Bearing stiffener condition = Good

8. Loose rivets/bolts = 🔊 🕫

9. Welds on tension flange =

10. Any cracks observed = ()

Span 3 Notes:

Other Notes:

1. Web corrosion =

2. Bottom flange plate corrosion =

3. Bottom flange angle corrosion =

4. Top flange plate corrosion =

10. Any cracks observed = 10. Other Notes:

Span 4 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 5 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

t Bas

4. Top flange plate corrosion =
5. Lateral bracing system condition =
6. Bearing stiffener condition =
7. # of cross frames and spacing =
8. Loose rivets/bolts =
9. Welds on tension flange =

DPG SPANS: CONC. PIERS

E&N Railway

SECTION: Victoria to Nanaimo

1241 (//// MILE POST #

CROSSING:

STREAM:

SPAN TYPE:

Sand Standy Mills

INSPECTION DATE: 10/25/11

STREAM DEPTH: 2

HEIGHT:

LOCATION: | 244

FLOW DIRECTION:

LENGTH:

INSPECTORS: ARA / AL.

DECK TYPE: Open / Ballast

RATING:

NO. OF SPANS:

WALKWAY: (Yes/No - E/W side)

SPAN LENGTH(S):

NO. OF TRACKS:

HANDRAILS: (Yes/No) - E/W side)

Inspection Findings:

ABUTMENT NOTES

Type of Abutment Construction =

South:

- 1. Evidence of scour / undermining = 🐧 🔾
- 2. Drift accumulated = 100
- 3. Ballast/debris on bearings = Mine Debris
- 4. Vegetation on face/seat = 18 %
- 5. Spalling =
- 6. Cracking under bearings = A
- 7. Cracking elsewhere = A
- 8. Rotation = N
- 9. Exposed reinforcing steel = 🌬
- 10. Efflorescence = 🔌 🖘
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

Other Notes:

North:

- 1. Evidence of scour / undermining =
- 2. Drift accumulated =
- 3. Ballast/debris on bearings =
- 4. Vegetation on face/seat = NO
 5. Spalling = place of count of beach seat
- 6. Cracking under bearings =
- 7. Cracking elsewhere =
- 8. Rotation =
- 9. Exposed reinforcing steel = 150
- 10. Efflorescence = 🔌 🐔
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry/abutment) =

	Type of Wingwall Construction = Conc	
٦	ype of Backwall Construction =	
1 2 3 4 5	South Abutment: Undermining = Abo Cracks = Construct Spalling = Abo Exposed reinforcing steel = Abo Other Notes:	
7	Other Notes:	N. Was
1	Vorth Abutment: Undermining = Cracks = Spalling = Cracks	
5	i. Exposed reinforcing steel = N to	
	Munus spelling at the case develop has society	
	RETE PIER NOTES	
1 1 2 3	Pier 1: Type of Construction = Const	penalal - effects
5	Leaning = Exposed reinforcing steel = Other Notes:	
F	tier 2: Ped Chris	
T	ype of Construction =	
	. Undermining =	
	. Cracks =	
	. Spalling = . Leaning =	
	Exposed reinforcing steel =	
	ther Notes:	
	<u>ier 3:</u>	
	ype of Construction =	
	Undermining = Cracks =	
	Spalling =	
J		
4	∉Leaning =	
	Leaning = Exposed reinforcing steel =	

<u>Pier 4:</u>

Other Notes:

Type of Construction =

1. Undermining =

2. Cracks =

3. Spalling =

4. Leaning =

5. Exposed reinforcing steel =

DECK NOTES Ballast / open deck =	
Track Alignment Notes: 1. Bridge on tangent or curve = 4 2. Max. superelevation at midspan = 0. 3. Chord offset at midspan (distance from center of track to center of girders) = 0. Other Notes:	
Ballast Deck Notes (if applicable): 1. Ballast depth = 2. Ballast retainer size = 3. Floor plate / floor timber condition = 4. Deck width = Other Notes:	
Tie Notes: 1. Tie size = 10 wide x 14 deep x 10 long 2. Tie spacing = 16 3. Ties dapped for superelevation = 10 a 4. Rail plates cutting into ties = 5. Overall tie condition = 6. Approach ties swinging = 7. Approx. number of bad ties = Other Notes:	
Track Notes: 1. Rail section weight = 2. CWR or jointed rail = 3. Inner guardrail size/weight (if applicable) = 2. S. Inner guardrail size/weight (if applicable) = 3. Approaches low = 3. Approaches low = 3. Other Notes	
Walkways/Refuge Bay Notes: 1. Walkways on bridge = 2. Walkway condition = 3. Refuge bays on bridge = 4. Refuge bay condition = Other Notes:	
SPAN NOTES Girder spacing = Girder depth = General steel condition =	
Span 1 Notes: 1. Web corrosion = 2. Bottom flange plate corrosion = 3. Bottom flange angle corrosion = 4. Top flange plate corrosion = 5. Lateral bracing system condition = 6. Bearing stiffener condition = 7. # of cross frames and spacing = 7. # of cross	wanted to the state of the stat

A Commence

- 8. Loose rivets/bolts = 🏄 🖟
- 9. Welds on tension flange = 🔊 🐇

Span 2 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 3 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 4 Notes:

- Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 5 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Mary marks a work of the

DECK TRUSS SPANS

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST # 1241 SPAN2

CROSSING:

STREAM:

SPAN TYPE:

INSPECTION DATE:

STREAM DEPTH:

HEIGHT:

LOCATION:

FLOW DIRECTION:

LENGTH:

INSPECTORS:

DECK TYPE: Open / Ballast

RATING:

NO. OF SPANS:

WALKWAY: (Yes/No - E/W side)

SPAN LENGTH(S):

NO. OF TRACKS:

HANDRAILS: (Yes/No - E/W side)

Inspection Findings:

ABUTMENT NOTES

Type of Abutment Construction =

1. Evidence of scour / undermining =

2. Drift accumulated =

- 3. Ballast/debris on bearings =
- 4. Vegetation on face/seat =
- 5. Spalling =
- 6. Cracking under bearings =
- 7. Cracking elsewhere =
- 8. Rotation =
- 9. Exposed reinforcing steel =
- 10. Efflorescence =
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

Le Spen &

Other Notes:

North:

- 1. Evidence of scour / undermining =
- 2. Drift accumulated =
- 3. Ballast/debris on bearings =
- 4. Vegetation on face/seat =
- 5. Spalling =
- 6. Cracking under bearings =
- 7. Cracking elsewhere =
- 8. Rotation =
- 9. Exposed reinforcing steel =
- 10. Efflorescence =
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) = Other Notes:

Guard the tree

BACKWALL/WINGWALL NOTES Type of Wingwall Construction = Type of Backwall Construction = South Abutment: 1. Undermining = 2. Cracks = Spalling = 4. Leaning = 5. Exposed reinforcing steel = Other Notes! North Abutment: Undermining = 2. Cracks = 3. Spalling = 4./ Leaning = 5. Exposed reinforcing steel = Other Notes: **DECK NOTES** Open deck = V **Track Alignment Notes:** 1. Bridge on tangent or curve = 2. Max. superelevation/at midspan = 3. Chord offset at midspan (distance from center of track to center of girders) = Other Notes:

1. Tie size = 10 wide x 14 deep x 13 long with bearing-bearing length = _____

2. Tie spacing =

3. Ties dapped for superelevation = No - Docket are

Les Ope

4. Rail plates cutting into ties = 00

5. Overall tie condition = 6 Approach ties swinging =

6. Approach ties swinging =

7. Approx. number of bad ties = 12

Other Notes:

Track Notes:

1. Rail section weight

2. CWR or jointed rail =

- 3. Inner guardrail size/weight (if applicable) =
- 4. Is line of track good =
- 5. Approaches low =

Other Notes:

Walkways/Refuge Bay Notes:

- 1. Walkways on bridge =
- 2. Walkway condition =
- 3. Refuge bays on bridge =
- 4. Refuge bay condition =

TRUSS MEMBER NOTES

General steel condition = Cook

Bearing Notes:

- 1. Type of bearings = Rolle WH
- 2. Full bearing =
- 3. Bearing corrosion =
- 4. Anchor bolt condition =
- 5. Expansion bearings functioning properly or frozen =
- 6. Bearings punching into abutment seat =

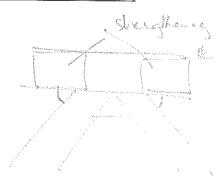
Other Notes:

Top Chord Notes:

- Section loss at critical locations = S. Lac.
- 2. Adequate bracing =
- 3. Cracks at chord splices =
- 4. Wear-in-web-pin-holes //
- 5. Fasteners condition = 6000

Notes (by nodal location established in field):

Should have at top of which



Top dock with Ext oteds

blin L - bed up shot I'

over 4" (lifting days)

Bottom Chord Notes:

- 1. Section loss at critical locations =
- 2. Eyebar-tightness =
- 3. Pack rust at eyebars =
- 4. Eyebar section loss =
- 5. Pins worn, scored or corroded =
- 6. Chord cracks = 🔥 🧳
- 7. Condition of splices =

Notes (by nodal location established in field):

Service and the service of the servi

The state of the s

Welder gusset & on chord Prece at all down

12/15

Hanger Notes:

- 1. Section loss in body above floorbeam connection =
- 2. Cracks at upper truss connection, lower row of fasteners =
- 3. Stress concentrations in the form of welds, edge corrosion =

Standberg & added to 4
Sealine diagonals, moded & sichh

4. Accident damage =

Notes (by nodal location established in field):

Diagonal Notes:

1. Section loss =

2. Compression/tension members =

3. End connection condition =

4. Tight (if tension members) =

Notes (by nodal location established in field):

Post Notes:

- 1. Alignment of post =
- 2. Internal bracing =
- 3. Member end condition =

Notes (by nodal location established in field):

End Post Notes:

- 1. Alignment of post =
- 2. Internal bracing =
- 3. Section loss =

Notes (by nodal location established in field):

TRUSS BRACING NOTES

Top Laterals Notes:

- 1. Section loss =
- 2. Connection condition =
- 3. Rod system components =

Notes (by nodal location established in field):

Bottom Laterals Notes:

- 1. Section loss =
- 2. Connection condition (truss/stringers) = (
- 3. Rod system components =

Notes (by nodal location established in field):

god in spetting on some

Sway Frame Notes:

- 1. Section loss =
- 2. Connection condition (top chords/verticals) =
- 3. Fatigue cracks =
- 4. Rod system components =

Notes (by nodal location established in field):

FLOOR SYSTEM NOTES

Floorbeam spacing =

Floorbeam depth =

Stringer spacing =

Stringer depth =

General steel condition =

Floorbeam Notes:

- 1. Web corrosion =
- 2. Bottom flangé plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange/plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Stringer Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

History:

- Original construction year =
- Summary of bridge updates =

Recommended Work:

ITEM#

1

RECOMMENDED WORK

<u>DPG SPANS: STEEL BENTS</u>

E&N Railway

SECTION: Victoria to Nanaimo

125.5 MILE POST

CROSSING:

STREAM:

SPAN TYPE:

INSPECTION DATE: 10

STREAM DEPTH:

HEIGHT:

LOCATION:

FLOW DIRECTION: 🚝

LENGTH:

INSPECTORS: APA / P

DECK TYPE: Open Ballast

RATING:

NO. OF SPANS:

NO. OF TRACKS:

WALKWAY: (Yes/No)E/W side)

SPAN LENGTH(S):

HANDRAILS: (Yes(No - E/W side)

Inspection Findings:

ABUTMENT NOTES

Type of Abutment Construction =

- Evidence of scour / undermining =
- 2. Drift accumulated =
- 3. Ballast/debris on bearings =
- 4. Vegetation on face/seat =
- 5. Spalling =
- 6. Cracking under bearings =
- 7. Cracking elsewhere =
- 8. Rotation =
- 9. Exposed reinforcing steel =
- 10. Efflorescence =
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13/Evidence of stone movement (masonry abutment) =

No

Øther Notes:

- Evidence of scour / undermining = No
- 2. Drift accumulated =
- 3. Ballast/debris on bearings =
- 4. Vegetation on face/seat =
- 5. Spalling =
- 6. Cracking under bearings =
- 7. Cracking elsewhere =
- 8. Rotation =
- 9. Exposed reinforcing steel =
- 10. Efflorescence =
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

Other Notes:

BACKWALL/WINGWALL NOTES			
Type of Wingwall Construction =			
Type of Wingwall Construction = Type of Backwall Construction =			
South Abutment: 1. Undermining = 2. Cracks = 3. Spalling = 4. Leaning = 5. Exposed reinforcing steel = Other Notes: North Abutment: 1. Undermining = 2. Cracks = 3. Spalling = 4. Leaning = 5. Exposed reinforcing steel = Other Notes:			
STEEL TOWER BENT NOTES Tower 1: 1. Single or double bent = Sungle 2. Tower general condition = good Misc. Notes (braces, plumbness, etc):	De		
Tower 1, Base of Legs:	Rec	27-87	
 SW Base Notes = SE Base Notes = 	SK	tived:	
3. NW Base Notes (if double bent) =4. NE Base Notes (if double bent) =	NHL	Good - Roc	Lat
Tower 1, Top of Legs: 1. SW Top Notes =	i de la companya de l	Good - Roc NO bolls as	9-42 A

2. SE Top Notes =

Tower 2, Base of Legs:

1. SW Base Notes =

3. NW Top Notes (if double bent) =

4. NE Top Notes (if double bent) =

Tower 2:

1. Single or double bent =

2. Tower general condition =

Misc. Notes (braces, plumbness, etc):

- 2. SE Base Notes =
- 3.\ NW Base Notes (if double bent) =
- 4. NE Base Notes (if double bent) =

Tower 2, Top of Legs:

- 1. SW Top Notes =
- 2. SE Top Notes =
- 3. NW Top Notes (if double bent) =
- 4. NE Top Notes (if double bent) =

Tower 3:

- 1. Single or double bent =
- 2. Tower general condition =

Misc. Notes (braces, plumbness, etc):

Tower 3, Base of Legs:

- 1. SW Base Notes =
- 2. SE Base Notes =
- 3. NW\Base Notes (if double bent) =
- 4. NE Base Notes (if double bent) =

Tower 3, Top of Legs:

- 1. SW Top Notes =
- 2. SE Top Notes =
- 3. NW Top Notes (if double bent) =
- 4. NE Top Notes (if double bent) =

Tower 4:

- 1. Single or double bent =
- 2. Tower general condition =

Misc. Notes (braces, plumbness, etc):

Tower 4, Base of Legs:

- 1. SW Base Notes =
- 2. SE Base Notes =
- 3. NW Base Notes (if double bent) =
- 4. NE Base Notes (if double bent) =

Tower 4, Top of Legs:

1. SW Top Notes =

2. SE Top Notes = 3. NW Top Notes (if double bent) = 4. NE Top Notes (if double bent) = **DECK NOTES** Ballast open deck = Open **Track Alignment Notes:** Bridge on tangent or curve = 2. Max. superelevation at midspan = 3. Chord offset at midspan (distance from center of track to center of girders) = 0 Other Notes: Ballast Deck Notes (if applicable): 1. Ballast depth = 2. Ballast retainer size = 3. Floor plate / floor timber condition = Other Notes: Tie Notes: 1. Tie size = 10 wide x 16 deep x 12 long 2. Tie spacing = 3. Ties dapped for superelevation = N 🖒 4. Rail plates cutting into ties = *** - pals 5. Overall tie condition = 6400 6. Approach ties swinging = 7. Approx. number of bad ties = "> Other Notes: **Track Notes:** 1. Rail section weight = 85 2. CWR or jointed rail = 3. Inner guardrail size/weight (if applicable) = 85 Is line of track good = ∀es. 5. Approaches low = Other Notes

Walkways/Refuge Bay Notes:

- 1. Walkways on bridge = ₩₩₩
- 2. Walkway-condition =
- 3. Refuge bays on bridge = 3 West 2 East.
- 4. Refuge bay condition =

Other Notes:

SPAN NOTES

Girder spacing =

Girder depth = 101141 at box General steel condition = Qood

Span 1 Notes:

- 1. Web corrosion =
- Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 4. Top flange plate corrosion =
 5. Lateral bracing system condition =
 6. Bearing stiffener condition =
 7. # of cross frames and spacing =
 8. Loose rivets/bolts =
 9. Welds on tension flange =

- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 2 Notes:

- 1.\ Web corrosion =
- 2. \Bottom flange plate corrosion =
- Bottom flange angle corrosion =
- Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any crácks observed =

Other Notes:

Span 3 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 4 Notes:

- Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

To of horseld shows L

Span 5 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 6 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 7 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

History:

- Original construction year =
- Summary of bridge updates =

Recommended Work:

ITEM #

RECOMMENDED WORK

DECK TRUSS SPANS

DECK DULLS

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST # 25 5

CROSSING:

STREAM: TSASLE

SPAN TYPE:

INSPECTION DATE: 10 /27

STREAM DEPTH: 3 3 FEET

HEIGHT:

LOCATION:

FLOW DIRECTION: E

LENGTH:

54

INSPECTORS: PHYDSH/API

DECK TYPE: Open / Ballast

RATING:

NO. OF SPANS:

WALKWAY: (Yes/No - E/W side)

SPAN LENGTH(S):

NO. OF TRACKS:

HANDRAILS: (Yes/No E/W side)

Inspection Findings:

ABUTMENT NOTES

Type of Abutment Construction =

South:

- 1. Evidence of scour / undermining =
- 2. Drift accumulated =
- 3. Ballast/debris on bearings =
- 4. Vegetation on face/seat =
- 5. Spalling =
- 6. Cracking under bearings =
- 7. Cracking elsewhere =
- 8. Rotation =
- 9. Exposed reinforcing steel =
- 10. Efflorescence =
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

Other Notes:

North:

- 1. Evidence of scour / undermining =
- 2. Drift accumulated =
- 3. Ballast/debris on bearings =
- 4. Vegetation on face/seat =
- 5. Spalling =
- 6. Cracking under bearings =
- 7. Cracking elsewhere =
- 8. Rotation =
- 9. Exposed reinforcing steel =
- 10. Efflorescence =
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) = Other Notes:

BACKWALL/WINGWALL NOTES
Type of Wingwall Construction =
Type of Backwall Construction =
South Abutment: 1. Undermining = 2. Cracks = 3. Spalling = 4. Leaning = 5. Exposed reinforcing steel = Other Notes: North Abutment: 1. Undermining = 2. Cracks = 3. Spalling = 4. Leaning = 5. Exposed reinforcing steel =
Other Notes:
DECK NOTES Open deck = Open
Track Alignment Notes: 1. Bridge on tangent or curve = 2. Max. superelevation at midspan = 3. Chord offset at midspan (distance from center of track to center of girders) = Other Notes:
Tie Notes: 1. Tie size = wide x long with bearing-bearing length = 2. Tie spacing = 3. Ties dapped for superelevation = 4. Rail plates cutting into ties = 5. Overall tie condition = 6. Approach ties swinging = 7. Approx. number of bad ties = Other Notes:
Track Notes: 1. Rail section weight = 2. CWR or jointed rail = 3. Inner guardrail size/weight (if applicable) = 4. Is line of track good = 5. Approaches low = Other Notes: Walkways/Refuge Bay Notes: 1. Walkways on bridge = 2. Walkway condition = 3. Refuge bays on bridge = 4. Refuge bay condition = Other Notes:

TRUSS MEMBER NOTES

General steel condition =

Bearing Notes:

1. Type of bearings = NORTH - ROLLER

SOUTH-FIXED

2. Full bearing = / OK

3. Bearing corrosion = SURFACE/MINOR PITTING ON BAREPLATE - SOUTH-PITTING SOLE PLATE

Anchor bolt condition = ⊆0005

5. Expansion bearings functioning properly or frozen = FROZEW

6. Bearings punching into abutment seat = N ()

Other Notes:

Top Chord Notes:

Section loss at critical locations =
 Adequate bracing = 165
 Cracks at chord splices = 10

4. Wear in web pin holes = 10

5. Fasteners condition = QUETS GOOD .

Notes (by nodal location established in field):

FAST SOUTH UI - BENT LACE.

16" At content be continued in the 2" x 6"

Bottom Chord Notes:

- 1. Section loss at critical locations = N○
- 2. Eyebar tightness = √ARIES ~SOME LOOSE
- 3. Pack rust at eyebars = NO
- Eyebar section loss = ♣↓○
- 5. Pins worn, scored or corroded = NO
- 6. Chord cracks = 100
- 7. Condition of splices = NO

Notes (by nodal location established in field):

LETT NORTH WEST BEARING - PITTING ON BATTEN PL-MAY 1/16" 古いEST-TRUSS LI-NORTH - MINDE SURFACE CORROSION BOTT CHORP PIN - NW-LI - MINOR SURFACE

-NONE **Hanger Notes:**

- 1. Section loss in body above floorbeam connection =
- 2. Cracks at upper truss connection, lower row of fasteners =
- Stress concentrations in the form of welds, edge corrosion =
- 4. Accident damage =

Notes (by nodal location established in field):

Diagonal Notes:

- 1. Section loss = SURFACE CORPOSION
- 2. Compression/tension members = BOTH
- 3. End connection condition = PINNED GOOD:
- 4. Tight (if tension members) = N ♦

Notes (by nodal location established in field):

L4- W NWEST - OUTSIDE CRACKED EYE

Post Notes:

- 1. Alignment of post = GOO ▷
- 2. Internal bracing = GOOD, SURFACE ONES CHECKED GOVD.
- 3. Member end condition = GOOD PINNEY

Notes (by nodal location established in field):

- SURFACE COEDOSION

End Post Notes:

- 1. Alignment of post = (含含() ()
- 2. Internal bracing = Control3. Section loss = SURFACE CORROLLA

Notes (by nodal location established in field):

TRUSS BRACING NOTES

Top Laterals Notes:

- 1. Section loss =
- 2. Connection condition = PINS MISSING COTTER
- 3. Rod system components =

Notes (by nodal location established in field):

Bottom Laterals Notes:

- 1. Section loss = SUMFACE CONNOCIONAL
- 2. Connection condition (truss/stringers) = Phi NED
- 3. Rod system components = SOME LOOS E APPEAR TO EYE.

 Notes (by nodal location established in field):

Sway Frame Notes:

- 1. Section loss =
- 2. Connection condition (top chords/verticals) =
- 3. Fatigue cracks =
- 4. Rod system components =

Notes (by nodal location established in field):

NORMEND SWAT CLOSS FR ANE - NO SECTION LOSS - FAIRLY TIGHT

FLOOR SYSTEM NOTES

Floorbeam spacing =

Floorbeam depth =

Stringer spacing =

Stringer depth =

General steel condition =

Theolean have plate added at ends on odds

Floorbeam Notes:

- Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

FBON-UL - DENT BOTT FLG COVER PL N-UZ - DENT - SIMILAR many de la constant d

Stringer Notes:
1. Web corrosion =
2. Bottom flange plate corrosion =
2. Bottom flange plate corrosion =3. Bottom flange angle corrosion =
4. Top flange plate corrosion = 5. Lateral bracing system condition =
5. Lateral bracing system condition =
6. Bearing stiffener-condition =
7. # of cross-frames and spacing =
8. Loose rivets/bolts = No
9. Welds on tension flange = 10.5 Any cracks observed = 10. Any cracks observed = 10.
10. Any cracks observed =
Other Notes:

History:

- Original construction year = Summary of bridge updates =

Recommended Work:

ITEM#

1

RECOMMENDED WORK

BRIDGE SKETCHES (AS REQUIRED)

PIER#2 - CONCRETE
- MOSS ONTOP.

- NO CRACKS @ BEARING

- NUINOR SPALLING BEH SW PIER CAP & SE SAME
- SOUTH FACE - 10' ABOUT GND - MINOR SPALL

PIED#1- CONCRETE

- MOSS ON TOP.

Timber Trestles

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST # 125. S

TISABLE R STREAM: **CROSSING:** SPAN TYPE:

INSPECTION DATE: STREAM DEPTH: HEIGHT: LOCATION: FLOW DIRECTION: LENGTH: INSPECTORS:

DECK TYPE: Open / Ballast RATING: NO. OF SPANS: WALKWAY: (Yes/No - E/W side) SPAN LENGTH(S):

NO. OF TRACKS: HANDRAILS: (Yes/No - E/W side)

Inspection Findings:

END BENT NOTES

Type of End Bent Construction =

- 1. # of piles = 📿 📡
- 2. Pile diameter =
- 3. Pile cap size = ____deep x ____wide

South End (Bent 1):

- 1. Drift accumulated = 🔊
- 2. Bent rotation = 🐴 🔊
- 3. Pile cap general condition =
- 4. Pile cap bulging/splitting = 1
- 4. Pile cap bulging/splitting =
 5. Pile cap has excessive internal/external decay =
 6. Pile general condition =
- 7. Piles have excessive internal/external decay = 😂 🔾
- 8. Piles bulging/splitting = 8 3 =

Other Notes:

North End (Bent TBD):

- 1. Drift accumulated =
- 2. Bent rotation =
- 3. Pile cap general condition =
- 4. Pile cap bulging/splitting =
- 5. Pile cap has excessive internal/external decay =
- 6. Pile general condition =
- 7. Piles have excessive internal/external decay =
- 8. Piles bulging/splitting =

Other Notes:

INTERMEDIATE BENT NOTES

Use timber schematic to mark up section loss in individual piles.

- # of piles =
- 2. Pile diameter =
- 3. Pile cap size = deep x wide
- 4. Bents plumb = V
- 5. Signs of pumping piles = NO
- 6. Signs of scour/erosion = N ○
- 7. Posted piles = No.

- All sound except or

BACKWALL/WINGWALL NOTES Type of Wingwall Construction = Type of Backwall Construction = South End: 1. Undermining = △○ 2. Cracks = 3. Leaning = Other Notes: North End: 1. Undermining = 2. Cracks =/ 3. Leaning = Other Notes: **DECK NOTES** Ballast / open deck = Track Alignment Notes: Track Alignment Notes: 1. Bridge on tangent or curve = 2. Max. superelevation at midspan = 2. 3. Chord offset at midspan (distance from center of track to center of stringers) = \mathcal{D} Other Notes: Ballast Deck Notes (if applicable): Ballast depth = 2. Ballast retainer size = 3. Floor plate / floor timber condition = 4. Deck width = 5. Floor timber size = Other Notes: Tie Notes: 1. Tie size = 8 wide x 6 deep x 10 long 337 was 1 confice. 2. Tie spacing = 3. Ties dapped for superelevation = 4. Rail plates cutting into ties = 5. Overall tie condition = 6. Approach ties swinging =

- 7. Approx. number of bad ties =
- 8. Method of tie connection =

Other Notes:

Track Notes:

- Rail section weight =
- 2. CWR or jointed rail =
- 3. Inner guardrail size/weight (if applicable) =
- 4. Is line of track good =
- 5. Approaches low =

Other Notes

Walkways/Refuge Bay Notes: 1. Walkways on bridge = 2. Walkway condition = 3. Refuge bays on bridge = 4. Refuge bay condition = Other Notes:	
SPAN NOTES 1. # of stringers = deep x wide 2. Stringer size = deep x wide 3. Out-out of exterior stringers = 4. General stringer condition = Use timber span schematic for marking up sectio 5. Ends of stringers crushing = 6. Horizontal shear cracks in stringers = 7. Fractured stringers = 8. Decay/insect damage = Other Notes:	
EXTRA TIMBER MEMBER NOTES (WHERE IN P 1. Longitudinal bracing = 2. Longitudinal bracing size = 3. Longitudinal bracing condition = 4. Sway bracing = 5. Sway bracing size = 6. Sway bracing condition = 7. Sash bracing = 8. Sash bracing size = 9. Sash bracing condition = 10. Mud sills @ bents = 11. Mud sill condition = Other Notes:	
History:	
 Original construction year = Summary of bridge updates = 	
Recommended Work:	RECOMMENDED WORK
1	VEOCUMEIADED MOLK

BRIDGE SKETCHES (AS REQUIRED)

Alexander Service Serv

Bets: All sound except as noted below

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Timber Trestles

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST # 125.5 (TIMBER SUPERSTRUCTURE)

CROSSING:	STREAM:	SPAN TYPE:	1
INSPECTION DATE: INO IN	STREAM DEPTH:	HEIGHT:	SEE
LOCATION: THABLE RIVER	FLOW DIRECTION:	LENGTH:	PREVIOUS
INSPECTORS: SCW DBH	DECK TYPE: Open / Ballast	RATING:	
NO. OF SPANS:	WALKWAY: (Yes/No - E/W side)	SPAN LENGTH(S):	LUTES
NO. OF TRACKS:	HANDRAILS: (Yes/No - E/W side)		7

Inspection Findings:

END BENT NOTES

Type of End Bent Construction =

- 1. # of piles =
- 2. Pile diameter =
- 3. Pile cap size = ____deep x ____wide

South End (Bent 1):

- 1. Drift accumulated =
- 2. Bent rotation =
- 3. Pile cap general condition =
- Pile cap bulging/splitting =
- Pile cap has excessive internal/external decay =
- 6. Pile general condition =
- 7. Piles have excessive internal/external decay =
- Piles bulging/splitting =

Other Notes:

AL

North End (Bent TBD): Bcut スリ

- Drift accumulated =
- 2. Bent rotation =
- 3. Pile cap general condition =
- 4. Pile cap bulging/splitting =
- 5. Pile cap has excessive internal/external decay =
- 6. Pile general condition =
- 7. Piles have excessive internal/external decay =
- 8. Piles bulging/splitting =

Other Notes:

INTERMEDIATE BENT NOTES

Use timber schematic to mark up section loss in individual piles.

- 1. # of piles =
- 2. Pile diameter =
- 3. Pile cap size = ____deep x ____wide
- 4. Bents plumb =
- 5. Signs of pumping piles =
- 6. Signs of scour/erosion =
- 7. Posted piles =

GENERAL:

- · EXTERDE CHECKS ON MANY PALES
- · STRIKERS IN WOO CONDITION

* THIS INSPECTION WAS STAFTED BY PW AL;
ALL THAT IS COVERED HERE IS THE TIMBER

SUPERSTRUCTURE FROM BENT 10 TO THE MORTH.

METHOD OF SUPERSTRUCTURE CHECK!

- · HAMMER SOLND PALE I (EXPOSED TO WORST WEATHER)
- · ENTER SPAN W SNOOPER IF STELLYLERS I OR 5 SHOW
 - DECAY
- · SUNG STENER 1
 - 4 INTERDE POSTS INAMESSIBLE

PILES:

- BI3, PI = HEAVY DECAY @ BASE OF 1ST STORY FROM TOP; 15/8" SHELL IN PLACE (MARKED W/ X)
- BILL PY = TOO OF PUST POORLY CUT => GAP IN BRG.
 BETWEEN CAPAPIST (TYPICAL THROUGHOUT)
- · Ba3, Pa = INTERMEDIATE CAP DAPPED SIZAHTLY
- . Ba3, P3 = ROTATED ON INTERMEDIATE CAP
- · Bay, PI = PILE TWISTED (END BENT)
 MISCELLANEOUS:

FOR POST

- BAB: FRACTURED X-BRACE ONE LEVEL DOWN FROM
 TOP (X-BRACE FROM 23->24) (DALE PLIOTO)
- · BOIR: X-BRAKE SPLIT ON EAST STAR ONE STORY DOWN
- FROM TOP

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September 1

RUN #1 RUN #2 OBSERVE TIMBER TAESTLE OBSERVE TIMBER TAESTLE OBSERVE TIMBER TAESTLE OBSERVE TIMBER TAESTLE EAST SIDE - DBH, JJ, BR. NOTED IN TIMBER OBSERVE TIMBER TAESTLE EAST SIDE - DBH, JJ, BR. LEVEL DBH, JJ, BR. OBSERVE TIMBER TAESTLE BUN #3 OBSERVE TIMBER TAESTLE BR. WEST REFUGE - SOUNY END D.T. END D.T. SENT TIMBER TAESTLE OBSERVE TIMBER TAESTLE OBSERVE TIMBER TAESTLE BR. WEST REFUGE - NORTH END D.T. RENT IN BENT

MLE 1255	RUN F3 SS-VISIALE - TIMBER STRINGER DE ELLO	DISH-VISIBLE - TIMBER STRINGER A - (23 - 24) - PECIC TRUSS SYRINGER STIEFENTHM	BR-VISIBLE TIE D DUE TO GAPS/SHIMMO	

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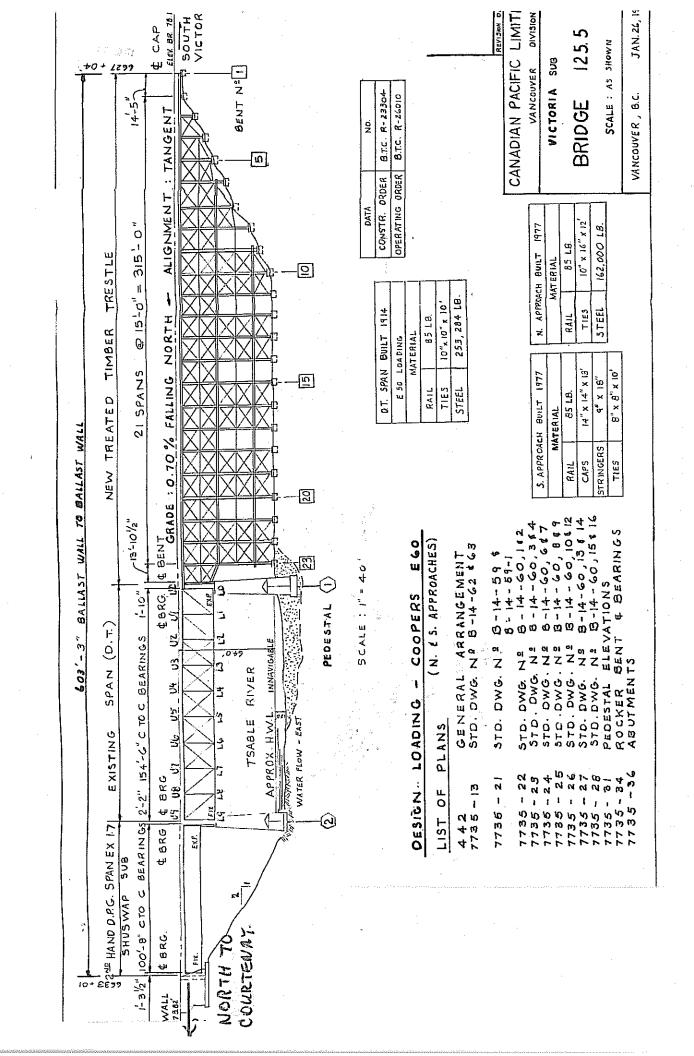
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E&N Railway

SECTION: Victoria to Nanaimo

MILE POST # \26\25

1998

CROSSING: Dama (A) INSPECTION DATE: 10/25/4

STREAM:

SPAN TYPE:

STREAM DEPTH:

HEIGHT:

LOCATION: 126.25

FLOW DIRECTION:

LENGTH: 120

INSPECTORS: APIS / AL

DECK TYPE: Open / Ballast

RATING:

NO. OF SPANS:

WALKWAY: (Yes/No -(E/W)side)

SPAN LENGTH(S):

120

NO. OF TRACKS:

HANDRAILS: (Yes/No -(E/W)side)

Inspection Findings:

ABUTMENT NOTES

Type of Abutment Construction =

- 1. Evidence of scour / undermining =
- 2. Drift accumulated =
- 3. Ballast/debris on bearings = 1
- 4. Vegetation on face/seat =
- 5. Spalling =
- ~ ~ » 6. Cracking under bearings = _
- 7. Cracking elsewhere =
- 8. Rotation =
- 9. Exposed reinforcing steel =
- 10. Efflorescence = No
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masopry abutment) =
- 13. Evidence of stone movement (masonry abutment) = Other Notes:

- 1. Evidence of scour / undermining = 1//A
- 2. Drift accumulated =
- 3. Ballast/debris on bearings =
- 4. Vegetation on face/seat =
- 5. Spalling =
- £.15
- 6. Cracking under bearings =
- 7. Cracking elsewhere = 1)
- 8. Rotation =
- 10
- 9. Exposed reinforcing steel = 🕬
- 10. Efflorescence =
- 11. Missing or fractured stones (masongy abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) = Other Notes:

BACKWALL/WINGWALL NOTES Type of Wingwall Construction = Type of Backwall Construction = South Abutment:

Undermining = №◊

2. Cracks =

3. Spalling =

4. Leaning =

5. Exposed reinforcing steel

Other Notes:

North Abutment:

Undermining =

2. Cracks =

3. Spalling =

4. Leaning =

5. Exposed reinforcing steel =

Other Notes:

DECK NOTES

Ballast / open deck =

Track Alignment Notes:

1. Bridge on tangent or curve =

2. Max. superelevation at midspan = 🏚

3. Chord offset at midspan (distance from center of track to center of girders) = Other Notes:

Ballast Deck Notes (if applicable):

1. Ballast depth = 20" to top of the second state of the second state

Other Notes:

1. Tie size = ___ wide x ___ deep x ___ long with bearing-bearing length = ___

2. Tie spacing = 📆

3. Ties dapped for superelevation = 100

Rail plates cutting into ties = \\ \frac{1}{2} \rightarrow \...

5. Overall tie condition = ○₩

6. Approach ties swinging =

7. Approx. number of bad ties = N 600

Other Notes:

Track Notes:

1. Rail section weight =

2. CWR or jointed rail =

Inner guardrail size/weight (if applicable) = \$\left\[\left\]

4. Is line of track good =

5. Approaches low =

Other Notes:

Walkways/Refuge Bay Notes: 1. Walkways on bridge = 2. Walkway condition = 3. Refuge bays on bridge = 4. Refuge bay condition = Other Notes:	announcements of the second of
SPAN NOTES Girder spacing = 13 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Market and a state of the state
Bearing Notes: 1. Type of bearings = 2. Full bearing = 3. Bearing corrosion = 4. Anchor bolt condition = 5. Expansion bearings functioning properly or frozen = 6. Bearings punching into abutment seat = Other Notes:	in the state of th
Girder Notes: 1. Web corrosion = 2. Bottom flange plate corrosion = 3. Bottom flange angle corrosion = 4. Top flange plate corrosion = 5. Lateral-bracing-system condition = 6. Bearing stiffener condition = 7. # of cross-frames and spacing = 8. Loose rivets/bolts = 9. Welds on tension flange = 10. Any cracks observed = Other Notes:	n Carrier Carr
Floorbeam Notes: 1. Web corrosion = 2. Bottom flange plate corrosion = 3. Bottom flange angle corrosion = 4. Top flange plate corrosion = 5. Lateral bracing system condition = 6. Bearing stiffener condition = 7. # of cross frames and spacing = 8. Loose rivets/bolts = 9. Welds on tension flange = 10. Any cracks observed =	ne English and Antonio Bellinoon in the Contraction of the Contraction

Other Notes:

Stringer Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- 5. Lateral braging system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. Welds on tension flange =
- 10 Any cracks observed =

Other Notes:

Knee Brace Notes:

1. Corrosion =

2. Cracks in connection angles = No

4. Accident damage =

Other Notes:

History:

- Original construction year =
- Summary of bridge updates =

Recommended Work:

ITEM #

RECOMMENDED WORK

BRIDGE SKETCHES (AS REQUIRED)

Timber Trestles

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST # 127.6

STREAM:	SPAN TYPE: TIMES SLAGES
STREAM DEPTH:	HEIGHT:
FLOW DIRECTION:	LENGTH:
DECK TYPE: Open Ballast	RATING:
WALKWAY: (Yes/No)- E/W side)	SPAN LENGTH(S):
HANDRAILS: (Yes/No) – E/W side)	
= >	LOW DIRECTION: ECK TYPE: Open Ballast VALKWAY: (Yes/No E/W side)

Inspection Fig	ndings:
----------------	---------

END BENT NOTES	A	T) 14				4
Type of End Bent Construction =	C. O. M. Can	Sath	gilled of c	Spend	170	134 J.
1. # of piles =						
2. Pile diameter =					NO	sollis
3. Pile cap size =deep x	wide				00	

Carete apon who toutage.

6' dop-aff from slab . - semulate

South End (Bent 1):

- 1. Drift accumulated =
- 2. Bent rotation =
- 3. Pile cap general condition =
- 4. Pile cap bulging/splitting =
- 5. Pile cap has excessive internal/external decay =
- 6. Pile general condition =
- 7. Piles have excessive internal/external decay =
- 8. Piles bulging/splitting =

Other Notes:

North End (Bent TBD):

- 1. Drift accumulated =
- 2. Bent rotation =
- 3. Pile cap general condition =
- 4. Pile cap bulging/splitting =
- Pile cap has excessive internal/external decay =
- 6. Pile general condition =
- 7. Piles have excessive internal/external decay =
- 8. Piles bulging/splitting =

Other Notes:

INTERMEDIATE BENT NOTES

Use timber schematic to mark up section loss in individual piles.

- 1. # of piles =
- 2. Pile diameter =
- 3. Pile cap size = ____deep x ____wide
- 4. Bents plumb =
- 5. Signs of pumping pites =
- 6. Signs of scour/erosion =
- 7. Posted piles =

BACKWALL/WINGWALL NOTES Type of Wingwall Construction =

Type of Backwall Construction =

South End:

- Undermining =
- 2. Cracks =
- 3. Leaning =

Other Notes:

North End:

- 1. Undermining =
- 2. Cracks =
- 3. Leaning =

Other Notes:

DECK NOTES

Ballast / open deck = 0

Track Alignment Notes:

- 1. Bridge on tangent or curve = 2. May are:
- 2. Max. superelevation at midspan =
- 3. Chord offset at midspan (distance from center of track to center of stringers) = Other Notes:

Ballast Deck Notes (if applicable):

- 1. Ballast depth =
- 2. Ballast retainer size =
- 3. Floor plate / floor timber condition =
- 4. Deck width = /
- 5. Floor timber size =

Other Notes:

- 1. Tie size = 6 wide x 4 deep x 12 long
- 2. Tie spacing =
- 3. Ties dapped for superelevation = N_0
- 4. Rail plates cutting into ties =5. Overall tie condition =
- 6. Approach ties swinging = 10

- 7. Approx. number of bad ties = 8. Method of tie connection =

Other Notes:

Track Notes:

- 1. Rail section weight = %\$
- 2. CWR or jointed rail =
- 3. Inner guardrail size/weight (if applicable) = DP
- 4. Is line of track good =
- 5. Approaches low = No

Other Notes

	Walkways/Refuge Bay Notes:
	1. Walkways on bridge/=
	2. Walkway condition/=
	3. Refuge bays on bridge =
	4. Refuge bay condition =
	Other Notes:
CD A	N. NOTEC
SPA	N NOTES 1. # of stringers =
	2. Stringer size = 22 deep x 12 wide 20 6 1 6 1
	3. Out-out of exterior stringers =
	4. General stringer condition = Good
	Use timber span schematic for marking up section loss in individual stringers where required
	5. Ends of stringers crushing = No.
	6. Horizontal shear cracks in stringers = 1
	7. Fractured stringers = NO
	8. Decay/insect damage = 🗸 💮
	Other Notes:
FXTI	RA TIMBER MEMBER NOTES (WHERE IN PLACE)
LXII	Longitudinal bracing = //
	Longitudinal bracing size =
	3. Longitudinal bracing condition =
	4. Sway bracing = 4. Sway brac
	5. Sway bracing size =
	6. Sway bracing condition =
	7. Sash bracing =
	8. Sash bracing size =
	9. Sash bracing condition =
	10. Mild cilla @ home -
	11. Mud sill condition = A cond Clark & Sun
	Other Notes:
	11. Mud sill condition = Apol Sh le + 8" sulls each and Dh shape - to well

History:

- Original construction year = Summary of bridge updates =

Recommended Work:

ITEM# 1

RECOMMENDED WORK

DPG SPANS: CONC. PIERS

E&N Railway

SECTION: Victoria to Nanaimo

VANATAUG TO CONTENAY

MILE POST # |3|

CROSSING: WASHER CREEK

STREAM: 45

SPAN TYPE: DPG

INSPECTION DATE: 1102

STREAM DEPTH: 3

HEIGHT: SEE 식사.

LOCATION: Upzon BAY

FLOW DIRECTION: EAST

LENGTH: SEE G.A.

SPAN LENGTH(S): 36 51 36

INSPECTORS: 5000 DBH

DECK TYPE: Open/ Ballast

NO. OF SPANS: 3

WALKWAY: (Yes/No + E/W side)

RATING: TBD

NO. OF TRACKS: 1

HANDRAILS: (Yes No - E/W side)

Inspection Findings:

ABUTMENT NOTES

Type of Abutment Construction = CONCRETE SPILL-THRU ABUTMENTS

South:

- 1. Evidence of scour / undermining = No (AWAY FRIM CREEK SPILL THRU)
- 2. Drift accumulated = ~
- 3. Ballast/debris on bearings =
- Vegetation on face/seat =
- 5. Spalling = Manag SURFACE
- Cracking under bearings = N₀
- 7. Cracking elsewhere = とる
- 8. Rotation = ん。
- 9. Exposed reinforcing steel = No
- 10. Efflorescence =
- 11. Missing or fractured stones (masonry abutment) = NA
- Missing mortar from joints (masonry abutment) = №
- 13. Evidence of stone movement (masonry abutment) = N_{Δ}

Other Notes:

North: 1926

- 1. Evidence of scour / undermining = No (WATER BETWEEN PLEES)
- 2. Drift accumulated = -
- 3. Ballast/debris on bearings = Manager.
- 4. Vegetation on face/seat = ፕሬፍ ኒና የዕዳሜሪ ለአናሪ
- 5. Spalling = Mause @ Courses
- 6. Cracking under bearings =
- Cracking elsewhere = νειγ κωνικ
- 8. Rotation = 込。
- 9. Exposed reinforcing steel = N_6
- 10. Efflorescence = N₄
- 11. Missing or fractured stones (masonry abutment) = ⋈A
- 12. Missing mortar from joints (masonry abutment) = NA
- 13. Evidence of stone movement (masonry abutment) = NA

· PHOTOS WARR ABUTMENT OF SPILLTHOU NOWD; SIDES LIVELY DEFPER, BUT COLD

FILL JOIL

BACKWALL/WINGWALL NOTES

Type of Wingwall Construction = Concert (90°)

Type of Backwall Construction = Concerts

South Abutment:

- 1. Undermining = ₩ 6
- 2. Cracks = りゃ
- 3. Spalling = Maxun€
- 4. Leaning = い。
- Exposed reinforcing steel = №

Other Notes:

North Abutment:

- 1. Undermining = ሥ₀
- 2. Cracks = Manage
- 3. Spalling = C GORDER BETWEEN BARWALL WINXWALL
- 4. Leaning = ん。
- 5. Exposed reinforcing steel = No

Other Notes: MINOR EFFLORESIENE

- Mass THROUGHOUT

CONCRETE PIER NOTES

Pier 1:

Type of Construction = CONCRETE ON FUTURE (POSSERLY ON PULES)

- 1. Undermining = しゃ
- 2. Cracks = ರಿಂ
- 3. Spalling = MINDE ON WEST FKE
- 4. Leaning = ມູເ
- 5. Exposed reinforcing steel = ${\it P}$

Other Notes:

Pier 2: |914

Type of Construction = CONCRETE, ON FORTHUL (PUSABLY ON PALES)

- 1. Undermining = No; SAND EMBANEMENT EXPENSE C UPSTREAM END
- 2. Cracks = MONOR
- 3. Spalling = TOP OF FOOTLING ON WEST SIDE WHERE CREEK FLIMS
- 4. Leaning = ん。
- Exposed reinforcing steel = Ν_α

Other Notes: Creek FLOWS RIGHT AT PIER 2; No NOTES FOUND UNDER PIER,
BUT WATER FOR SCOUR (PHOTOS)

PIÈT 3: PROBED TO 3' ON E/W SIDE (FILM BED C 3' DEPTH)

Type of Construction =

- 1. Undermining =
- Cracks ≒
- Spatling =
- 4. Léaning =
- 5. Exposed reinforcing steel =

Other Notes:

Type of Construction =

- 1. Undermining =
- 2. Cracks =
- 3. Spalling =
- Éxposed reinforcing steel =

Other Notes:

DECK NOTES

Ballast / open deck = OPEN

Track Alignment Notes:

- 1. Bridge on tangent or curve = TANKENT
- 2. Max. superelevation at midspan = -
- Chord offset at midspan (distance from center of track to center of girders) = Other Notes:

Ballast Deck Notes (if applicable):

- 1. Ballast depth =
- 2. Ballas retainer size =
- 3. Floor plate / floor timber condition =
- Degk width =

Other/Notes:

Tie Notes:

- 1. Tie size = 16 wide x 16 deep x 13 long
- 2. Tie spacing = 15"
- Ties dapped for superelevation = λο
- 4. Rail plates cutting into ties = λρ
- 5. Overall tie condition = fance
- 6. Approach ties swinging = SA= No (RAIL SPANS V 2 FROM APPRIAM TIE TO BEINE)
- 7. Approx. number of bad ties = (4)

Other Notes: SEVERAL THE -> GIRDER SPINES MISSING

Track Notes:

- 1. Rail section weight = 95.5*
- 2. CWR or jointed rail = \(\frac{1}{2} \)
- 3. Inner guardrail size/weight (if applicable) = 50 *
- Is line of track good = Υ^E≤
- 5. Approaches low = N₀

Other Notes

Walkways/Refuge Bay Notes:

- Walkways on bridge = №₀
- 2. Walkway condition = -
- Refuge bays on bridge = № s
- Refuge bay condition = —

Other Notes:

SPAN NOTES

Girder spacing = lo Girder depth = 36" (13); 46" (2) General steel condition = f_{NAR}

Span 1 Notes: (いだて)

- 1. Web corrosion = No (50 REALE ON INSIDE (PROTE))
- 2. Bottom flange plate corrosion = MOSTLY FLANZING
- 3. Bottom flange angle corrosion = " ; @ South END Mois on AHALE (PLOTO)
- 4. Top flange plate corrosion = Mエルッド
- 5. Lateral bracing system condition = fack, Paut PLANCIUL
- 6. Bearing stiffener condition = IN IZNE W/ FRUT OF BELY NOT ANEWE BILL
- 7. # of cross frames and spacing = ス エルスをエンス、 スモルロ 9'-9" SPACING

- 8. Loose rivets/bolts = -
- 9. Welds on tension flange = -

ده ووه

10. Any cracks observed = N ₪

Other Notes: SE SW BENEUX ANEWER BOLTS HAVE SURFACE

SPAN à STREFELVERS:

- · EXTERLOR WEB STIFFENERS BENT @ BOTTOM IN MULTIPLE SPOYS
- · PHOTO OF BENT STREFENES C MADDAN OF EAST GIEDER

Span 2 Notes:

1. Web corrosion = PADLY FLAMING MINOR SURFALE LORRESTON

2. Bottom flange plate corrosion = PACK RIST BETWEEN CHER R. 1 & 2 (END OF PL. 2 (PHOT.); ALL 4 ENDS

3. Bottom flange angle corrosion = PASS FLAKES ACCUMULATING => THERESED CURROSION (WORSE THAN SP. 1+3)

4. Top flange plate corrosion = المسعد

5. Lateral bracing system condition = FAIR; BIRBS NESTS @ CRUSS-BRACES

-> CORESTON ON TOP FACE OF BOTTOM ANKLES NEAR BENEZUES

6. Bearing stiffener condition = OV; SEE COMETS ON OTHER STIFFENERS

- 7. # of cross frames and spacing = See אבאגל
- 8. Loose rivets/bolts = Nっ
- Welds on tension flange = N►
- 10. Any cracks observed = ん。

Other Notes: EXTRA ANGLE ADDED TOP/BOTTOM ON OUTTIDE @ MIDSPAN ~3' LONG.

Span 3 Notes:

- 1. Web corrosion = SURFACE ONLY W FLAKENA
- 2. Bottom flange plate corrosion = Manager
- 3. Bottom flange angle corrosion = Moss ON Brown FLANGE; SEE CORESTON SKETCH
- 4. Top flange plate corrosion = WEST CHERRY, SOUTH BRG, TOP PLATE BENT DOWN ABOVE BRG; END PLATE BENT & TUP
- Lateral bracing system condition = FAIR
- Bearing stiffener condition = Frase
- 7. # of cross frames and spacing = SEE_PLANS
- 8. Loose rivets/bolts = -
- Welds on tension flange =
- Any cracks observed = —

Other Notes: NE NW BENDUM ANCHE BOTTS HAVE SURFACE

こったのうせいい

Span 4 Notes:

- Web corrosion =
- Bottom flange plate corrosion =
- 3. Bottom fjange angle corrosion =
- Top flagge plate corrosion =
- Lateral bracing system condition =
- Bearing stiffener condition =
- # of/cross frames and spacing =
- 8. Loose rivets/balts =
- Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 5 Notes:

- Web corrosion/=
- Bottom flange plate corrosion =
- Bottom flange angle corrosion =
- Top flangé plate corrosion =
- 5. Lateral gracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- 8. Loose rivets/bolts =
- 9. We**j**ds on tension flange =
- 10. Any cracks observed =

Other Notes:

2 x 1/8"

- Original construction year = 1914 (CENTER) KALLEND 59M3)
 Summary of bridge updates = SUM ENERS REPLACED

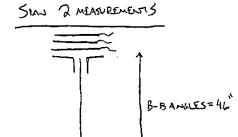
Recommended Work:

ITEM#

RECOMMENDED WORK

BRIDGE SKETCHES (AS REQUIRED) [MUST COME BACK IN PHASE 5]

1 MEASUREMENTS (ALSO SPANS) 15-71/4



MILE 13!.	SOUTH ABUTHENT	- DUG SHOWS SPILL THRU	, UNDERMINING - NOT	FOUND FOR STATE OF ST	SURFACE SPA	C BACK WALL + WIMS WALL	CONCRETE	- LIFT JOINT NORTH FASS	E ROSION	TEANISM CONTRACTOR CON	and the state of t	
		n de la constantina del constantina de la constantina del constantina de la constant	1) Filogramment is tongs now a	and the second state of th	Actions and the state of the st							

MILE 131.11 ~ NOV 2	DIER #2 - CNORTH)	FACE	FLOWING AG AMST	EROSION OF, EMBRACHENT	(SAND) @ PUPSTREAM FACE	LAPROACH	PROBED TO CREEK BED @	UPSTREAM & DOWNSTREAM	ENDS OF PIER FIG -	NO UN DER MIMING DETECRED	DEPTH WATER TO FIRM	BED APROX 3							
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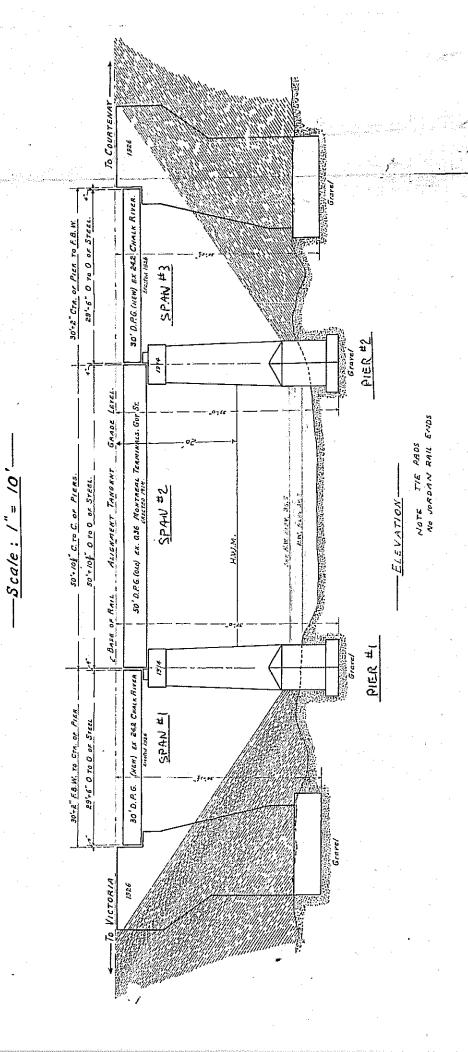
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576

- WASHER CREEK -

-ESQUIMALT & NANAIMO RAILWAY -- BRIDGE NO. 131.1



DPG SPANS: STEEL BENTS

E&N Railway

SECTION: Victoria to Nanaimo

MILE POST # |35.\

CROSSING: TEST BUER

STREAM: ROWER

SPAN TYPE: 196

INSPECTION DATE: Noa.

STREAM DEPTH: 5 (Max); 2 (AVL) HEIGHT: JSEE G.A.

LOCATION: ROYSTON

FLOW DIRECTION: EAST

INSPECTORS: SCU DBH

DECK TYPE (Open) / Ballast

RATING: TBL

NO. OF SPANS: 5

WALKWAY: (Yes/No)- E/W side)

SPAN LENGTH(S): 45 (2) 75(2) 48

NO. OF TRACKS: 1

HANDRAILS: (Yes(No)- E/W side)

Inspection Findings:

ABUTMENT NOTES

Type of Abutment Construction = CONCRETE SPALL-THRU ABUTMENTS W WINKWALLS

South: (1927)

- 1. Evidence of scour / undermining = אA, אדער אונט
- 2. Drift accumulated = いっ
- Ballast/debris on bearings = ▷
- 4. Vegetation on face/seat = № 6
- 5. Spalling = しゅ
- 6. Cracking under bearings = い。
- 7. Cracking elsewhere = ሥ୍ର
- 8. Rotation = いっ
- Exposed reinforcing steel = №
- 10. Efflorescence = いっ
- 11. Missing or fractured stones (masonry abutment) = NA
- 12. Missing mortar from joints (masonry abutment) = NA
- 13. Evidence of stone movement (masonry abutment) = NA

Other Notes: SURFACE CARDYDON OF BENEVIL STEEL

North:

- 1. Evidence of scour / undermining = NA 、シャュル ていもひ
- 2. Drift accumulated = YES ロルタテルマ
- Ballast/debris on bearings = →
- 4. Vegetation on face/seat = い。
- 5. Spalling = い。
- Cracking under bearings = №
- 7. Cracking elsewhere = A
- 8. Rotation = ん。
- Exposed reinforcing steel = N ⋅
- 10. Efflorescence = い。
- 11. Missing or fractured stones (masonry abutment) =
- 12. Missing mortar from joints (masonry abutment) =
- 13. Evidence of stone movement (masonry abutment) =

Other Notes: ONW BENEAUL, SURFACE CORRESTION ON SOLE PLATE

" NE BEARDY STUDIAR

BACKWALL/WINGWALL NOTES

Type of Wingwall Construction = 96 Concert (ALL PART OF ABJUMENT)

Type of Backwall Construction = Consect

South Abutment:

- 1. Undermining = いっ
- 2. Cracks = Manager
- 3. Spalling = Mark
- Leaning = №.
- 5. Exposed reinforcing steel = Na

Other Notes:

OSE SW FEMBER WENKWALL EXTENSIONS UNDERMIDENT SECURITY (PHOTO)

North Abutment:

- 1. Undermining = しゃ
- 2. Cracks = MINNE
- عدده = 3. Spalling = معددة
- 4. Leaning = No
- Exposed reinforcing steel = ル

Other Notes:

BUN TIMBER EXTENSION UNDERMINENT SIZAHTLY

STEEL TOWER BENT NOTES

Tower 1:

- 1. Single or double bent = Double
- 2. Tower general condition = fATR

Misc. Notes (braces, plumbness, etc):

Tower 1, Base of Legs:

- 1. SW Base Notes = HILLS CONCRETE SPALLS
 - · 10 SQUARE FUTHING UNDER CONCRETE DEDESTAL
- 2. SE Base Notes TURFALE CURRENDO ON OUTTANDUL LEGE BASE (~0.2" MAX LISS) · PACK RUST · STATLAR FUTTING ARRANGEMENT TO SW BASE; MAY HAVE STIGHT UNDERWILLE
- 3. NW Base Notes (if double bent) = いっ いっぱってく
- 4. NE Base Notes (if double bent) = No Computs

Tower 1, Top of Legs:

- 1. SW Top Notes = SINGLAR TO SE
- 2. SE TOP Notes = · HEAVY RUST ON TOP OF COLUMN FROM BUILD UP OF MUSS, FLAKES, ETC.
- · ANCHOR BUTS CORRODED · LEW ITSELF ON
- 3. NW Top Notes (if double bent) = . MASS (RUST BUTLET UP C ANKHOR BOLTS , DEBETS ON COLUMN PLATE
- · MINUR PITTULL BELOW BRL. PLATE ABOVE CILUMN TOP PLATE
- NE Top Notes (if double bent) = WIN of garance

Tower 2:

- 1. Single or double bent = 🗘 ນອຍເຂ
- 2. Tower general condition = Face

Misc. Notes (braces, plumbness, etc):

- O SOUTH STRUT C BASE, 3/8" PACK RUST W/ KNOSE EDGE (LIXAL) IN TOP FLANGE
 - 1/8 PETCHE OF WEB WIDER FLYENCE PARTY

TOP

Tower 2, Base of Legs:

- 1. SW Base Notes = # MISS RUST BURLT UP @ ANCHOR BOLTS, DEBRIS ON COLUMN PLATE
- · MINOR PITTING BELOW BRG. PLATE ABOVE CILUMN TOP PLATE

2. SE Base Notes = "SAME AS SW

3. NW Base Notes (if double bent) = "SUPPORTS BRACKET FOR SMALLDWER SPAN 5; BRACKET OK

4. NE Base Notes (if double bent) = "SEE DANGEM FROM BRGS. (PASTUS)

Tower 2, Fep of Legs:

- 1. SW FOR Notes = MANDE STALLOW ERUSION @ LAPT TOTAL . I'DE WATER OVER SOURCE BASE . 1/5 CLERESON OF BRE, & SALE PLACE . MASS DEBRIS ON FOSTANDE
- 2. SE Fop Notes = 3" DEEP & 2" WILL CRACK IN CONCRETE PEDESTAL

 MAS VECETATION CAROLINA
- 3. NW Fop Notes (if double bent) = CONCERTE DETERMINAL OR SWINFACE
 TEMBER RET, WALL RETCHALCULARSSING 3' HIGH
- 4. NE Top Notes (if double bent) =

Tower 3:

- 1. Single or double bent =
- 2. Tower general condition =

Misc Notes (braces, plumbness, etc):

Tower 2 STRUTS (CONTO):

- · EAST STRUT BASE, BOTTON FLANCE SECTION LISS CEDE
- · NUEW STRUT, EAST BATTEN, 18" METCHE, 16" COMUSIAN

Tower 3, Base of Legs

- 1.\ SW Base Notes =
- ŠĘ Base Notes =
- 3. NW Base Notes (if double bent) =
- 4. NE Base (Notes (if double bent) =

Tower 3, Top of Legs:

- 1. SW Top Notes =
- SÉ Top Notes =
- 3./NW Top Notes (if double bent) =
- 4. NE Top Notes (if double bent)=

Tower 4:

- 1. Single or double bent =
- 2. Tower general condition =

Misc. Notes (braces, plumbness, etc):

Tower 4, Base of Legs:

- 1.\ SW Base Notes =
- 2. ŠĘ Base Notes =
- 3. NW Base Notes (if double bent) =
- 4. NE Base Notes (if double bent) =

Tower 4, Top of Legs:

1. SW Top Notes =

- 2. SE Top Notes =
- 3. NW Top Notes (if double bent) =
- 4. NE Top Notes (if double bent) =

DECK NOTES

Ballast / open deck = OPEN

Track Alignment Notes:

- 1. Bridge on tangent or curve = TANKENT
- 2. Max. superelevation at midspan = o
- 3. Chord offset at midspan (distance from center of track to center of girders) = Ô Other Notes:

Ballast Deck Notes (if applicable):

- 1. Ballast depth =
- 2. Ballast retainer size =3. Floor plate / floor timber condition =
- 4. Deck width =

Other Notes:

Tie Notes:

- 1. Tie size = 10 wide x 16 deep x 13 long
- 2. Tie spacing =
- 3. Ties dapped for superelevation = -
- 4. Rail plates cutting into ties = しょ
- Overall tie condition = FATE
- 6. Approach ties swinging = ₽₽
- 7. Approx. number of bad ties = 4つ

Other Notes:

Track Notes:

- 1. Rail section weight = 95
- 2. CWR or jointed rail = James
- 3. Inner guardrail size/weight (if applicable) = \(\sum_{\infty} \infty \) \(\sum_{\infty} \) \(\sum_{\infty} \)
- 4. Is line of track good = \€\$
- 5. Approaches low = No

Other Notes

Walkways/Refuge Bay Notes:

- 1. Walkways on bridge = ん。
- 2. Walkway condition = -
- 3. Refuge bays on bridge = \, west sabe
- 4. Refuge bay condition = BROKEN FLOOR TOMBER

Other Notes:

SPAN NOTES

Girder spacing = SEE PHASE 5 MEASUREMENTS Girder depth = General steel condition = FAR

Span 1 Notes: (SOUTH END EXPANSION)

* EAST & WEST GRADER SINGLAR LESS MUSS ON WEST

- 1. Web corrosion = Manimaly Mostly FLANDING
- 2. Bottom flange plate corrosion = Manual
- 3. Bottom flange angle corrosion = LARLE ANDERS OF MOSS ON FLANGE (NOTOS)
- Top flange plate corrosion = مسمده
- 5. Lateral bracing system condition = FADR , DEBERS ON เด็นพยะเกิดแร
- 6. Bearing stiffener condition = COOD, APPEAR NEWER THAN MOST GARDER ELEMENTS
- # of cross frames and spacing = —
- 8. Loose rivets/bolts = 🔎
- 9. Welds on tension flange = ນູລ
- 10. Any cracks observed = പ്രം

Other Notes: . Muss on Bottom OF TOP SHELE ANKLE (PHOTOS) & ZUTERZUR OF SPAN HAS LESS MUSS THAN · LOTS OF DEBRIS C BRKS

Span 2 Notes:

- 1. Web corrosion = MUST POTUTE LONE, NO REAL WEB CORRESTION
- 2. Bottom flange plate corrosion = MINING
- 3. Bottom flange angle corrosion = mass accumulation > (2) X/2 (2) SIDE 600751DE) EAST

 4. Top flange plate corrosion = mass accumulation > (2) X/16 ("") WEST

4. Top flange plate corrosion = Manage

- 5. Lateral bracing system condition = FAIR ΜΙΝΙΚ డుగ్గాంకుంట
- 6. Bearing stiffener condition = کوچه
- 7. # of cross frames and spacing = -
- Loose rivets/bolts = λω
- Welds on tension flange = N₀
- a (۱۵. Any cracks observed = الم

Other Notes:

Span 3 Notes:

- 1. Web corrosion =
- 2. Bottom flange plate corrosion =
- 3. Bottom flange angle corrosion =
- 4. Top flange plate corrosion =
- Lateral bracing system condition =
- 6. Bearing stiffener condition =
- 7. # of cross frames and spacing =
- Loose rivets/bolts =
- 9. Welds on tension flange =
- 10. Any cracks observed =

Other Notes:

Span 4 Notes:

- 1. Web corrosion = Manageman
- 2. Bottom flange plate corrosion = MLNUR
- 3. Bottom flange angle corrosion = 3 MUSS SAUTS (MINIMAL COMPARED TO JIMERS) (WEST); NO MUSS EAST
- 4. Top flange plate corrosion = Manage
- Lateral bracing system condition = FALE
- Bearing stiffener condition = ∠∞
- 7. # of cross frames and spacing = -
- Loose rivets/bolts = N₀
- Welds on tension flange = √
- 10. Any cracks observed = No

Other Notes: WEST CARRER BETTER THAN EAST

- O TOP FLANGE ANGLE BENEZHG DOWN ON OUTSIDE ABOUT

BRL. STREFENER, EAST WIRDER (PHOTO)

SEE SPAN 1

COMMENTS

· LESS FLAKING, MOSS GROWIN THAN SP. 2

· CHERRY CATES CONTROL MOTTER & TERM HOLERAND

Span 5 Notes: (SWETTER GIRBER) 1. Web corrosion = MINUR 2. Bottom flange plate corrosion = MINOR 3. Bottom flange angle corrosion = 2 x/8 PITTENT IN VERTICAL LEK, BITH SIDES, INTERIOR " CONSIDE WEST WILLY YS PTS. OF SPAN 2"x18" " 4. Top flange plate corrosion = Activose 5. Lateral bracing system condition = FAIR 6. Bearing stiffener condition = ∠∞□ · EAST CHEDER, NORTH END: 16 x 3 CREUSION ON TOP SURFACE OF 7. # of cross frames and spacing = -8. Loose rivets/bolts = 👡 BOTTOM ANGLE HORIZONIAL LEG. 9. Welds on tension flange = N₃ 10. Any cracks observed = 人る Other Notes: • RHOWN DEFECT IN EAST CHEER TOP SHELF ANGLE, 4Th STOFFENER FROM SOUTH (PHOTO) & LOTS OF GRAFFITT INSIDE SPAN Span 6 Notes: 1. Web corrosion = Bottom flange plate corrosion = Bottom fange angle corrosion = Top flange plate corrosion = 5. Lateral bracing system condition = 6. Bearing stiffener condition = 7. # of cross frames and spacing = Lobse rivets/bòlts = Welds on tension flange = 10. Any cracks observed = Other Notes: Span 7 Notes: 1. Web corrosion = 2. Bottom flange plate corrosion = 3. Bottom flange angle corrosion = 4. Top flange plate corrosion = Lateral bracing system condition = Bearjng stiffener condition = 7. # of/cross frames and spacing = 8. Loøse rivets/bolts = Welds on tension flànge = 10. Any cracks observed ≥ Other Notes:

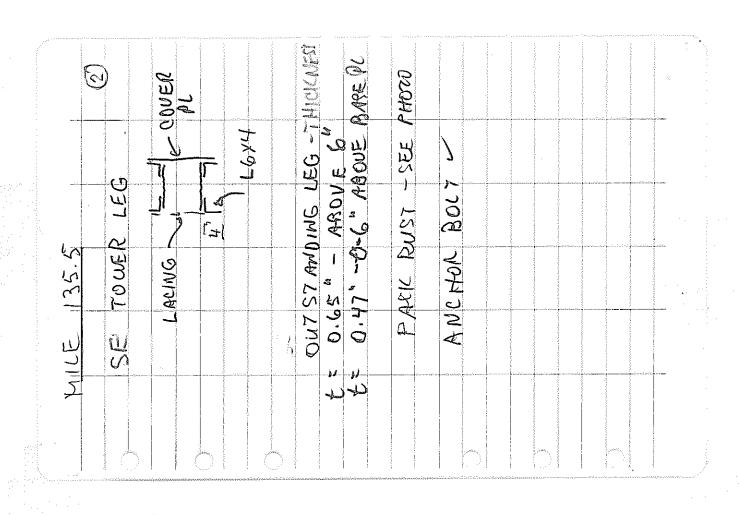
History:

Original construction year = Summary of bridge updates = \SEE PLANS

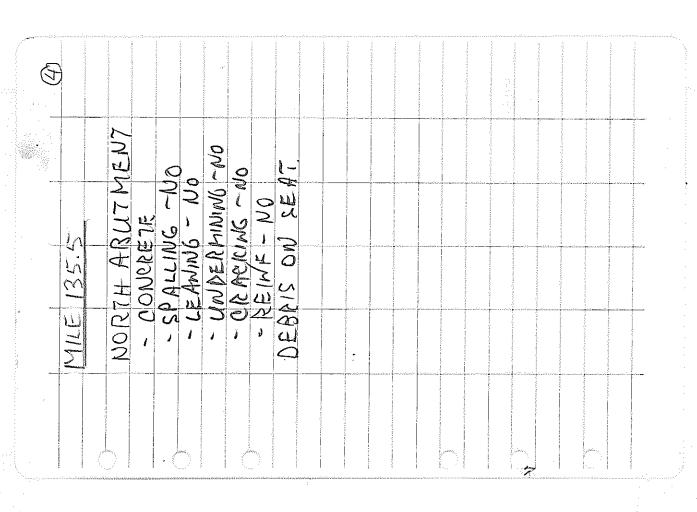
Recommended Work:

ITEM# 1

RECOMMENDED WORK



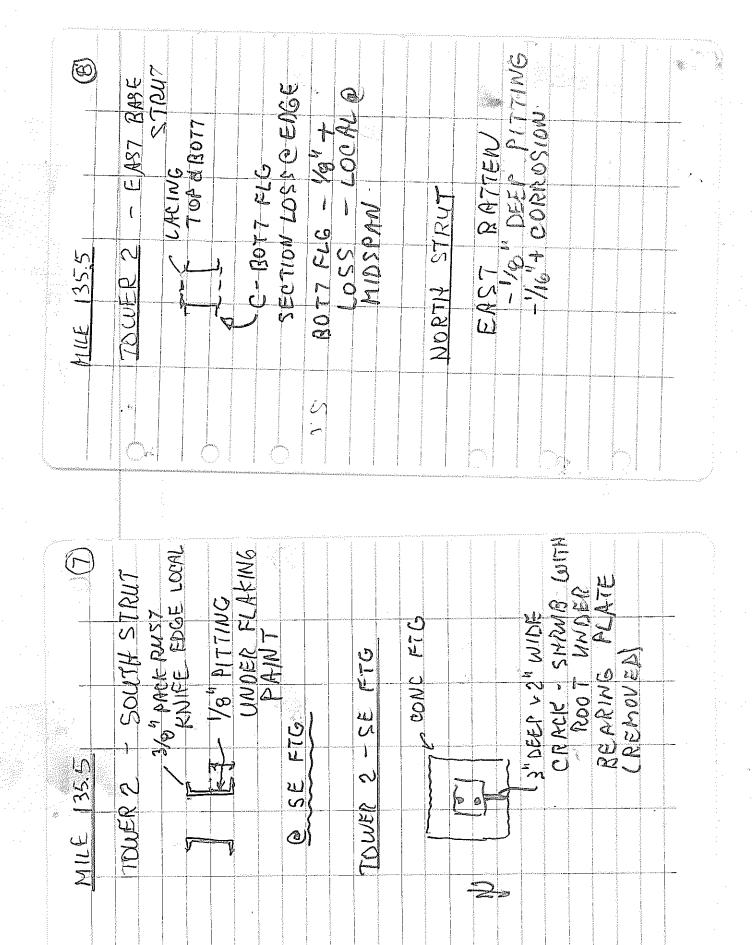
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MILE 135.5 TOWER #1	10 D 13	



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M.C. 35.5	TOWFR #2 RW-FOOTING	- Spalling (Enosion att			ON TIMG	- No detectable under	REARING & SOLE PIL 16" CORRUS-
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REVISED MAR. 1938. oct 1943 BRIDGE Nº 135.1 - TRENT RIVER -ESQUIMALT & NANAIMO RAILWAY

