

REGIONAL DISTRICT OF NANAIMO

ELECTORAL AREA 'A' PARKS, RECREATION AND CULTURE COMMISSION
REGULAR MEETING
WEDNESDAY, NOVEMBER 19, 2014
7:00 PM

(Cedar United Church)

AGENDA

PAGES

CALL TO ORDER

DELEGATIONS

Motion to receive late delegation.

MINUTES

3-6 Minutes of the Regular Electoral Area 'A' Parks, Recreation and Culture Commission meeting held September 17, 2014.

7 Minutes of the Electoral Area 'A' Parks, Recreation and Culture Commission Grant Sub-Committee ending October 8, 2014 via email.

Motion to approve Minutes.

BUSINESS ARISING FROM THE MINUTES

Grant Approvals

That the Electoral Area 'A' Grant-In-Aid application for Cedar Family of Community Schools be approved for a total of \$440.00 to purchase equipment for their community cooking bin.

COMMUNICATIONS/CORRESPONDENCE

8 T. Stone, Ministry of Transportation and Infrastructure to J. Stanhope, RDN Board, **RE: Playground Zone Signs**

9 D. Banman, RDN, to P. Sabo, School District 68, **RE: SD68 and RDN Meeting**

REPORTS

PARKS

10-16 Monthly Update of Regional and Community Parks and Trail Projects–September 2014

17-24 Monthly Update of Regional and Community Parks and Trail Projects–October 2014

- Water Access Report/Priorities (*Commission*)
- 25-70 Nanaimo River Pedestrian Crossing at MCRT Feasibility Study Report (For Information)

RECREATION

- 71-74 Planning Session Notes w/ Inventory List
- 75-84 Facility Usage Survey RDN Board Briefing - SD68 only - Nov 2010
- 85-90 Recreation Facilities and Sport fields Services Agreements Report- Nov 2012

Motion to receive Reports.

BUSINESS ARISING FROM DELEGATIONS OR COMMUNICATIONS

NEW BUSINESS

Cedar Sport Court

Proposed resolution:

That the RDN enter into a contribution agreement for up to \$120,000 of Electoral Area 'A' Community Works Funds with Snuneymuxw First Nation for the construction of a sport court. Subject to an appropriate agreement between the stakeholders for long term community use.

Commission Applications/Renewals

COMMISSIONER ROUND TABLE

IN CAMERA

That pursuant to Section 90(1) (e) of the Community Charter the Committee proceed to an In Camera Committee meeting to consider items related to land issues.

ADJOURNMENT

Motion to adjourn.

NEXT MEETING

TBD

REGIONAL DISTRICT OF NANAIMO

**MINUTES OF THE ELECTORAL AREA 'A' PARKS, RECREATION AND
CULTURE COMMISSION REGULAR MEETING
HELD WEDNESDAY, SEPTEMBER 17, 2014
7:00PM
(CEDAR HERITAGE CENTRE)**

Attendance: Alec McPherson, RDN Director, Chair
Jim Fiddick
Patti Grand
Bernard White
Angela Vincent
Carolyn Mead
Andrew Thornton
Kerri-Lynne Wilson

Staff: Hannah King, Superintendent of Recreation Program Services
Elaine McCulloch, Parks Planner
Ann-Marie Harvey, Recording Secretary

Regrets: Eike Jordan

CALL TO ORDER

Chair McPherson called the meeting to order at 7:08 PM.

DELEGATIONS

As there were no specific delegations, Chair McPherson opted to have a question and answer time at the end of the meeting so that any questions the patrons in the gallery may still have could be answered.

MINUTES

MOVED Commissioner Grand, SECONDED Commissioner White that the minutes of the Regular Electoral Area 'A' Parks, Recreation and Culture Commission meeting held June 18, 2014 be received.

CARRIED

COMMUNICATIONS/CORRESPONDENCE

MOVED Commissioner Vincent, SECONDED Commissioner Fiddick that the following Communications/Correspondence be received:

L. Ebert, Cedar Resident to E. McCulloch, RDN, **RE: Skateboard Lessons**

CARRIED

REPORTS

Monthly Update of Regional and Community Parks and Trail Projects–June-August (*handout*)

Ms. McCulloch reviewed the report for Area 'A' items.
Commissioner Grand asked if a letter could be sent from the Director to the North Cedar Fire Department thanking them for the watering the grass at the Cedar Skate Park to get it established.

Commissioner Fiddick mentioned that during the Sunday event at the skate park, it was very difficult to get through on Walsh from cars parking on both sides of the road. Ms. McCulloch said she has discussed playground signs with MOTi for that area.

Commissioner Fiddick asked Ms. McCulloch about the Horse Courtesy Sign at Morden Colliery and 49th Parallel trailhead going up. Is it there? Ms. McCulloch will follow up.

MOVED Commissioner Grand, SECONDED Commissioner Mead that the Monthly Update of Regional and Community Parks and Trail Projects–June-August be received.

CARRIED

Walsh/McMillan Road Parkland Dedication Report *(For Information)*

Ms. McCulloch gave a brief update of the Walsh/McMillan Rd. parkland dedication. This report went through the Board in August. Chair McPherson noted this land provides a chance for a boardwalk along York Lake.

MOVED Commissioner Wilson, SECONDED Commissioner Vincent that the Walsh/McMillan Road Parkland Dedication Report be received.

CARRIED

Water Access Report *(Commission)*

Ms. McCulloch handed out a printed version of the Water Access Report draft that was compiled by the Commission. There are still some photos and information missing which the Commission will compile for the next meeting. The Commission decided to add an extra hour to the Recreation Planning Session in November to review changes, additions and priorities to the Water Access Report. Ms. McCulloch offered her assistance if needed (e.g. printing).

MOVED Commissioner Vincent, SECONDED Commissioner Mead that the Water Access Report be received.

CARRIED

NEW BUSINESS

Cedar School – Field, Play Surfacing, Play Equipment and Safe Walk Routes Update

Ms. McCulloch met with the school district to discuss the field, play surfacing, and play equipment. They walked through the plans and she summarized that the playfield base is sand and is intended mainly for playing soccer. Field booking will likely be through the school coordinators or through SD facilities. The portables will not be moved. A gravel path will connect the school to the skate park.

Cedar School - Safer Walk Routes

Ms. McCulloch met with MoTI staff, the school principal and the school district facility supervisor. They looked at how they could make a safer walk routes leading to the school. The School District has recently constructed a new path that connects Holden Corso Rd. to the school through the school fields.

Monitoring will be done to make note if the path most taken is through the Cedar Skate Park and if the skate park becomes a drop off point. How can we use our trails to tweak them so that we can get more students on the trails, is what Ms. McCulloch will further discuss with the sub-committee for the safer walk routes.

Financial Update - Recreation & Parks Reserve Funds

- Cash in Lieu account for Park Acquisition = **\$350,321**
- General EA A Community Parks = **\$288,221**
- EA A Community Parks designated for Cedar Plaza = **\$22,656**
- EA A Recreation = **\$273,589**

Chair McPherson explained what the reserve fund usage and cash in lieu accounts can be used for and this summary is for the Commission's information.

Recreation Programming and Service Delivery

Ms. King gave a brief summary of the Electoral Area 'A' timeline of Programming and Services and provided examples of other communities' recreation delivery models.

Recreation Planning Session – Date

The date of November 1st from 10-2 was decided on. An additional hour to 3:00pm was suggested so that the Beach access report can be discussed and reviewed for input and changes.

Grants Deadline

Ms. King noted the deadline for Grant submission is September 26th and has been advertised in Take 5 and Harbour City Star. There has been one submission to date.

QUESTION AND ANSWER

Debbie Bloom – Pace Rd.

Headland Rd-Pace Rd to the water, a group of community members made a path. Is there a public access to Hemer Park? Jim and Ms. Bloom will be in contact to discuss.

Ms. McCulloch explained the mechanism of a Trail license that can be entered into with a land owner to alleviate the liability to the land owner. The advantage of having these official trail licences is that the trail routes can then be put on Regional District maps and guides.

James Bennett – Ravenhill Rd.

What can we do to make a trail?

Chair McPherson noted that if you walk a certain way enough times, it makes a trail but it must be on the MoTI right of way.

Ms. McCulloch explained that you cannot take down trees, and that the RDN must take out a "permission to construct works" permit from MoTI permit for any structure (e.g. culvert, bridge, sign) installed on MoTI property.

Debbie Bloom – Pace Road

With the interest of the Shasta Rd. connector, would it be possible to discuss the right of way through the back of the property?

Chair McPherson said that when that area comes up for development that is a discussion we can have at the time.

COMMISSIONER ROUND TABLE

Commissioner Vincent noted her intrigue of pulling together of the community history which isn't usually recognized and hopes to see the Boat Harbour book out in the community. Sees lots of opportunities for history.

Commissioner Mead had a great time at Village Square Days with her daughters, the event had more things than last year. She told the Commission she will be moving when her house sells as her husband has accepted a job out of town. In the house selling process it reminded her that there is no place here to grab something published to represent Cedar.

Commissioner Grand let the Commission know that the URL www.icedar.ca is available for sale if that is important to somebody in the community. It is \$140/year to maintain and about \$400 to purchase from Bonnie Stevens.

Commissioner Thornton shared that it is 5 years to the day when he moved to South Wellington. Mid-Island Taichi.org is the only club run by donation and he just set up the website for it.

Commissioner McPherson summarized the funding for the Morden Mine Engineering report - Regional Parks and trails budget committed \$15,000, the City of Nanaimo committed \$7,500, Friends of Morden Mine committed \$23,500 and EA 'A' Parks committed up to \$6500. \$20,800 plus some contingency was the cost that came in and Eric Rich of the Friends of Morden Mine wanted to pass along his thanks to the Commission for the additional funding. Chair McPherson gave an update of the Morden Colliery (Nanaimo River) Bridge study and it will come to this committee for consideration and comment.

IN CAMERA

MOVED Commissioner Wilson, SECONDED Commissioner Grand that pursuant to Section 90(1) (e) of the Community Charter the Commission proceed to an In Camera Commission meeting to consider items related to land issues.

TIME: 8:45pm

CARRIED

ADJOURNMENT

MOVED Commissioner Thornton SECONDED Commissioner Jordan that the meeting be adjourned at 9:10pm.

CARRIED

Chair

REGIONAL DISTRICT OF NANAIMO

MINUTES OF THE ELECTORAL AREA 'A'
RECREATION AND CULTURE GRANT-IN-AID PROGRAM SUB-COMMITTEE
MEETING HELD VIA EMAIL CORRESPONDENCE, CONCLUDING OCTOBER 8, 2014

Attendance: P. Grand, Commissioner
A. Vincent-Lewis, Commissioner

Staff: Hannah King, Superintendent of Recreation Program Services
A. Harvey, Senior Secretary

Regrets: J. Fiddick, Commissioner

The budget for the 20114 Grant-In-Aid was presented as follows:

Annual Budget 2014	\$ 10,000.00
Grant funds disbursed to date in 2014	\$ 1500.00
Grant funds remaining in 2014	\$ 8,500.00

REVIEW OF FALL 2014 APPLICATIONS

The committee discussed through email the one application that was submitted.

One application were received for funding with a request of **\$440.00** Following is a general summary of the application:

Organization	Description	Requested
CEDAR FAMILY OF COMMUNITY SCHOOLS	To purchase cooking equipment for our community cooking bin. The list of equipment will replace broken and overly used/lost equipment and utensils.	\$440.00

The Committee endorsed the total funding request of \$440.00 for the purchase of cooking equipment for the community cooking bin.

RECOMMENDATION(S)

That the Electoral Area 'A' Grant-In-Aid application for Cedar Family of Community Schools be approved for a total of \$440.00 to purchase equipment for their community cooking bin.

CARRIED



RDN CAOS OFFICE			
CAO	<input checked="" type="checkbox"/>	GM R&P	<input checked="" type="checkbox"/>
GMS&CD		GM T&SW	
GM R&CU		DF	
NOV - 3 2014			
DCS		BOARD	<input checked="" type="checkbox"/>
CHAIR	<input checked="" type="checkbox"/>		

October 31, 2014

Joe Stanhope, Chair
Regional District of Nanaimo
6300 Hammond Bay Road
Nanaimo BC V9T 6N2

Reference: 229337

Dear Chair Stanhope:

Re: Playground Zone Signs

Thank you for your letter expressing concerns on behalf of local area residents regarding road signs at permanently closed school sites.

Safety is the ministry's highest priority, and ministry staff will work with the Regional District of Nanaimo (RDN) and the local school districts to review the concerns you raise. I understand a number of the permanently closed school sites, including South Wellington School, are currently available for sale or rent. Ministry staff will work with Regional District representatives to complete a review of the level of playground activity at these sites to assess whether playground or other warning signs should be put in place. Staff will continue to monitor these locations following any changes in property use to ensure signage remains appropriate.

I am advised our local Operations Manager, Johnathan Tillie, has scheduled a meeting with the RDN in the near future to discuss this issue in greater depth. If you have any questions regarding this issue in the meantime, please do not hesitate to contact Mr. Tillie by telephone at 250 751-3287 or by e-mail at Johnathan.Tillie@gov.bc.ca. He would be pleased to assist you.

Thank you again for taking the time to write.

Sincerely,

Todd G. Stone
Minister

Copy to: Johnathan Tillie, Operations Manager
Vancouver Island District

From: [Pete Sabo](#)
To: [Banman, Dean](#)
Cc: [Graham Roberts](#); [Osborne, Tom](#)
Subject: RE: SD68 and RDN Meeting
Date: Wednesday, November 05, 2014 3:19:40 PM

Thanks Dean, I will refer your email to Graham Roberts who is the Acting ST.

You may or may not be aware that Phil Turin has retired and his last day is Friday November 7th.

Pete

From: Banman, Dean [mailto:DBanman@rdn.bc.ca]
Sent: Wednesday, November 05, 2014 3:11 PM
To: Pete Sabo
Cc: Osborne, Tom
Subject: SD68 and RDN Meeting

Hi Pete, we are hoping **to meet with SD68 staff to discuss some common items** and update each other on relevant activities/projects. We would be willing to organize the meeting at your convenience. I have started a list of items for discussion/update;

- 1) Cedar Heritage Centre land lease (expires 2020) and Cedar Heritage Centre lease with CSCES (expires 2015)
- 2) SD68 plans for school facilities in the communities of Cedar, South Wellington
- 3) Safe walk routes
- 4) Sport Court project with SNF and Cedar Ball Hockey Association
- 5) Community School Co-ordinator's role in community recreation programming
- 6) Extension school update
- 7) Field development around Cedar Elementary

Regards,

Dean Banman

Manager of Recreation Services
Regional District of Nanaimo, Recreation and Parks
830 West Island Highway
Parksville, BC
V9P 2X4
P: 250.248.3252 or 1.888.828.2069
F: 250.248.3159 www.rdn.bc.ca



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Parks Functions Report

TO: Tom Osborne
General Manager of Recreation and Parks

DATE: October 14, 2014

FROM: Wendy Marshall
Manager of Parks Services

FILE:

SUBJECT: Monthly Update of Community Parks and Regional Parks and Trails Projects

During September staff have been involved with the following projects and issues.

Electoral Area Community Parks

Area A

Staff continued to work with the contractor to complete the outstanding deficiencies at the Cedar Skate Park. A bronze plaque was installed and ongoing and regular garbage collection and maintenance visits were conducted.

Staff attended a site meeting with School District 68 staff regarding their field and playground upgrades at Cedar Elementary School. The purpose of the meeting was to inform the Regional District of the planned works. The contractor for the works used the Cedar Skate Park overflow parking area as a staging site for their works; this was done under agreement with the Regional District. The contractor agreed to return the site to as was or better condition once they were complete. The contractor also re-graded the Skate Park parking lot at no cost to the community.

Staff attended a site meeting with School District 68 and Ministry of Transportation and Infrastructure staff regarding Safer Walk Route planning for the new Cedar Elementary School.

Staff prepared and distributed the September 17th PRCC meeting agenda package, attended the meeting and prepared the meeting minutes.

Staff worked with the Nanaimo Skateboard Association to plan a Skate Jam event held on September 14th at the Cedar Skate Park. Along with issuing a Park Use Permit for the event an event map was developed by staff to provide information on parking and site set up for park events.

Staff met on site with the maintenance contractor to examine weeding and brushing maintenance plans for the Morden Colliery Trail plaza/trailhead.

Area B

Staff continued to work with the consultant to develop a Preferred Concept Plan for Huxley Park.

Staff provided park information and advice to a community member interested in developing a dog park on Gabriola Island.

At Rollo McClay Community Park water delivery continued due to siltation issues with the water well on site.

A secure, temporary cap was placed on the water well at Clamshell Community Park.

Lumber from downed hazard trees was milled into materials required for stair and landing repair work at Hummingbird Community Park.

Area C – Extension

Following completion of a new bridge at Extension Miners Community Park, park staff met on site to plan additional planting and site development work. Staff completed the site plan in consultation with community members. Park upgrades, which include fencing, bench and picnic table installation, and new trees and shrubs, will be completed by park staff in October. Stairs and a memorial plaque are scheduled for installation in Spring 2015.

Staff attended a site meeting with Planning staff and a developer regarding a potential OCP amendment /rezoning application which involves potential park land dedication.

Area C - East Wellington/Pleasant Valley

Staff continued to implement the first steps of the Anders and Dorrit's Community Park Master Plan: a land survey of the area surrounding the existing house; working with VIU students to identify the existing ornamental vegetation and to develop design options for the park; and investigating house removal options.

Ongoing site inspections and garbage clean up work were carried out at Anders and Dorrit's Community Park. An existing gate was re-hung, and a pedestrian access added at the north entrance to the park. Contracted mowing services also continued for this site.

Tree inspections and garbage removal work was completed at Meadow Drive Community Park.

Area E

Staff responded to a neighbour's complaint regarding the lack of toilet facilities at Blueback Community Park.

Trail pruning and garbage removal work was completed at Brickyard Community Park.

Area F

Milestone Contracting completed their final contract obligations of tree planting and hydro seeding of Meadowood CP. Park Operations hired a contractor to build toilet surround and install bollards. Planning staff are working with pro bono professionals and CMRA volunteers to build the picnic pavilion.

Staff met on site at Errington Community Park to discuss ditch clearing. This work is scheduled for October. Trail brushing and widening work was also carried out.

Staff met on site to examine plans for barricade placement at Price Road. This work has now been rescheduled for November.

Trail counter information was collected for Carrothers Trail.

Area G

Staff provided a final inspection for a trail through a community park which is to be dedicated as a result of the subdivision at 691 Wembley Rd (near Yellowbrick Rd.) The trail was built by the developer as part of their rezoning requirements.

Staff met with community members regarding potential improvements to the Admiral Tryon Rd. (Damion Rd.) water access. Staff provided advice as to how to make a request to the POSAC should the community members want to ask for community park funding and/or ongoing maintenance for the site.

Further to a request from RDN Water Services, staff met on site with consultants at Lee Road Community Park to GPS and examine the location of two water wells.

Area H

Staff prepared a site plan for the Henry Morgan Community Phase 2 construction which includes a swing and a porta potty with surround.

Trail maintenance work was carried out at McColl Road, Islewood Drive, Thompson Clarke and Shoreline Drive.

Miscellaneous

Numerous park inspection visits and maintenance projects were conducted throughout the district including garbage removal, brushing and trail maintenance, new sign layouts and installations, and sign maintenance, and numerous information requests were received from the public. Project forecasting/costing work was completed.

Community Works Projects

Rec and Parks staff and management are researching costs and logistics of moving SD69 portables to the Meadowood area for use as community hall. Report to the Board will be prepared to determine if project will go forward under Community Works funding.

Area B

Parks Staff met on site with Consultants and the adjacent landowner at Intrascapè Developments to review a specific culvert location along the trail route that requires coordination. Consultants are finalizing the 85% design package which will be submitted to MOTI in early October.

Regional Significant Gas Tax Project

Preliminary design work for the Rail Trail is on-going. Engineering design is currently focussing on water management and culvert design at various points along the trail route. Parks staff and Consultants have been preparing for the upcoming Open House on Oct. 9th. Newspaper ads, email and mail-out invitations and social media will advertise the event. Poster boards being prepared highlight sections along the trail route, the three main access points in Coombs, at Lowry's Rd and at Springwood Park. Example images of typical site amenities will be provided as well as an overview of the project timeline. A point-point slide show will run in the background.

Parks staff met with the City of Parksville to discuss the trailhead at Springwood Park in more detail. In advance of the upcoming Open House, Parks staff will present to City of Parksville Council in early October.

Parks staff also met with both the Qualicum and the Nanoose First Nations Chiefs (separately) to introduce and discuss the rail trail project in more detail.

Packages are being prepared for submission to MOTI to further explore the requirements and options for the road crossings along the trail route.

Regional Parks

Arrowsmith CPR Regional Trail

Park staff conducted trail inspections and maintained trails.

Beachcomber Regional Park

Preparations for the installation of a new entrance kiosk were completed by staff, including final design review and revision, permit application submission to the Ministry of Transportation and Infrastructure, and coordination of contractors. The kiosk is scheduled for installation in early October, 2014.

Park Staff conducted trail maintenance and park inspections. Trail counter data was collected.

Benson Creek Falls Regional Park

Staff checked trails for hazard trees, removed debris from trails, removed garbage. Staff removed alders for visibility of “No Parking” signage (Creekside). Staff removed garbage from parking lot and trail. Staff also seeded berms at the Creekside parking lot. ‘No parking’ flyers were provided to the Volunteer Park Warden and the Neighbourhood Watch group for use as friendly reminders to vehicles still parking at Jameson Rd. The parking situation at Jameson Rd will continue to be monitored and staff will respond to public inquiries. Geotechnical study terms of reference were developed for stairs project.

Coats Marsh Regional Park

Park staff conducted park inspections, maintained trails, monitored the berm and the pond leveler. Park staff investigated proposed new trail.

Descanso Bay Regional Park

Park staff conducted site inspections. Capital works were completed for 2014.

E&N Regional Trail

Trail counter data was collected.

Englishman River Regional Park

Park Staff carried out routine inspections of Englishman River Regional Park and Top Bridge Park. Staff responded to maintenance issues identified by the Volunteer Park Warden including; garbage issues, ATV trespass, vandalism, graffiti and suspect hazardous trees.

Park Staff also moved two cedar tables from hatchery to Top Bridge for a “Watershed Stewardship Tour”. Park staff installed a picnic table at Long Run.

Horne Lake Regional Park

Park staff continue to work with Park Operators on campground improvement projects.

Lighthouse Country Regional Trail

Park staff conducted park inspections, maintained trails and collected trail counter data. Staff brushed/cleared Lioness crossing as per agreement. Staff also installed new interpretive signage.

Capital works have started at the Lighthouse Lioness Parking Lot.

Little Qualicum River Estuary Regional Conservation Area

Park staff conducted park inspections monitoring the conservation area.

Staff met on site with Ducks Unlimited staff and BCCF staff to review proposed restoration planting project. Information was provided for the Mid-Island Guardians goose survey. Staff have liaised with the Qualicum Streamkeepers in support of their volunteer projects at the Spit, e.g. invasives removal.

Little Qualicum River Regional Park

Park staff conducted park inspections and maintained trails.

Moorecroft Regional Park

Park staff conducted park inspections and maintained trails. Trail counter data was collected. Staff removed garbage. Staff picked up six cedar picnic tables from Brannen Lake and distributed in park, also anchored/locked tables in place. A draft 'Dogs in Moorecroft Park' brochure has been produced and is now being reviewed by staff and operators. Routine leash patrols are being conducted by Coastal Animal Services.

Morden Colliery Regional Trail

Park staff conducted park inspections and maintained trails. Staff removed old signage and installed new post/signage along property boundary.

Mount Arrowsmith Massif Regional Park

Park Staff conducted trail maintenance and park inspections.

Mount Benson Regional Park

Park staff vacuumed glass debris from summit and conducted trail inspections.

Nanaimo River Regional Park

Park staff conducted park inspections and maintained trails. Staff removed "Tree work" signage, cleared invasive holly in research forest and pruned trails.

Top Bridge

Park staff conducted park inspections, maintained trails.

Trans Canada Trail

Park staff conducted trail inspections and maintained trails. Staff cleared trail at Haslam Bridge entrance. Staff measured wire rope and ordered for a replacement.

Witchcraft Lake Regional Trail

Park staff conducted trail inspections and maintained trails. Staff are working with the Nanaimo Mountain Bike Club with plans to develop a non-motorized trail on the undeveloped Harrow Rd ROW, which will connect from Westwood Lake, Witchcraft Lake RT to Benson Creek Falls RP. The MOTI permit was amended to include trail development along the whole length of Harrow Rd ROW.

Fairwinds Lakes District - Regional Park Management Plan

Staff organized the review of proposals, selection of consultants, transfer of mapping data, photos and reference documents, and the booking of meeting times and venues. An introductory meeting and Fairwinds site tour were held with chosen consultants, Urban Systems, on Sept 23. An Advisory Committee Meeting is scheduled for November 5 followed by the first Open House on November, 18.

Trail Counter Information

Month	BRP #1	BRP #2	Carrothers Trail	E&N Trail #2	E&N Trail Lowery Rd.	Moorecroft La Selva Place
2014-05-01	3,204	529	1,228	81	154	459
2014-06-01	3,375	727	1,530	85	1,168	1,113
2014-07-01	593	442	1,174	73	63	1,010
2014-08-01	2,341	558	99	114	20	1,017
2014-09-01	1,258	211	44	210	48	890

Miscellaneous

2015 Budget Development

Staff continued to work on the 2015 Operational and Capital Budgets.

Park Use Permits and Events

2 events: Watershed Field Trip at Top Bridge and Cedar Skate Event (over 300 kids)
4 PUPs inquiries/in process

Operational and Efficiency Review

Parks staff attended a meeting to resume work on the O&E Review and review draft recommendations prepared to date.

Website

Parks staff created a new page on the Parks website to provide quick access to General Information and Regulations.

Recommendations

That the Parks Update Report for September 2014 be received as information.



Manager of Parks Services



General Manager Concurrence

Parks Functions Report

TO: Tom Osborne
General Manager of Recreation and Parks

DATE: November 10, 2014

FROM: Wendy Marshall
Manager of Parks Services

FILE:

SUBJECT: Monthly Update of Community Parks and Regional Parks and Trails Projects

During October staff have been involved with the following projects and issues.

Electoral Area Community Parks

Area A

Ongoing and regular garbage collection and maintenance visits were conducted at the Cedar Skate Park. Graffiti removal work was undertaken.

Staff attended a Cedar Elementary School Safer Walk Routes Advisory Committee meeting.

Area B

Trail brushing and clearing was completed throughout all Whalebone Area Parks.

At Rollo McClay Community Park water delivery continued due to siltation issues with the water well on site. Cost estimates were provided for potential playground development. The irrigation system was blown out and shut down for the season.

Two hazard trees were removed from Queequeg Community Park in the Whalebone area.

Staff met with a Folklife Village representative to discuss park maintenance and shared security issues at the Huxley Park. GPS collection work is scheduled for November in order to accurately locate the border between the two properties. Staff also met users on site to discuss the draft preferred concept plan.

Staff provided information and advice to a community group interested in having an off-leash dog park on Gabriola.

Area C – Extension

Trees and shrubs were ordered for fall planting at Extension Miners Community Park. Boulders were moved to shore up existing bridge access ramp.

Area C - East Wellington/Pleasant Valley

Ongoing site inspections and garbage clean-up work were carried out at Anders and Dorrit's Community Park. Costing information was sought/received for an upcoming building removal project.

Staff met with Vancouver Island University Horticultural Program students to provide background information and answer questions regarding Anders and Dorrit's Community Park. The students are working on a design project for the plaza and picnic area.

Area E

Regulatory signage was posted at Brickyard Community Park.

Trail maintenance work was carried out at Prawn Road Trail Community Park.

Staff carried out a site review of a parkland dedication at Oak Leaf Drive. The developer is required to add a parking lot and manage storm water going into the park.

Area F

Drainage ditch construction was completed at Errington Community Park. A pedestrian footbridge was also replaced, new regulatory signage posted and additional trail brushing work continued.

Park user information was collected for Carrothers Road Trail.

Ongoing planning for ATV barricades and trail development work continued for Price Road (MOTI property). Additional grant funds being sought for increased scope of work, expected to occur in November.

A bike rack and garbage containers were received for upcoming installation at Meadowood Community Park. Wrap up work at Meadowood Community Park includes Milestone Contracting release of holdback and removal of construction signs; ongoing work with Meadowood volunteers to get the picnic pavilion built; monitoring of turf establishment and park safety.

Staff looked into the Province's process regarding the Silver Spurs' Section 57 trail application and provided advice.

The RDN Board and School District 69 developed and approved an agreement that allows the RDN to manage School District lands on Meadowood Way in Electoral Area F as a community park, and to potentially locate a community centre on the property. RDN Staff and the Corcan-Meadowood Residents' Association have toured the school district's surplus modular classrooms and have tentatively selected a set of portables suitable for community centre use.

Area G

Park signage was posted at Lee Road Community Park.

A hazard tree was removed at River's Edge Community Park.

Staff responded to a building vandalism issue at Dashwood Community Park.

Staff continued to get updates from community members and to provide advice regarding the community clean-up and planting at the Admiral Tryon water access.

Area H

A new swing set was installed at Henry Morgan Community Park. Playground safety surfacing is scheduled for installation in early November. Several trees were transplanted at the site, and a hazard tree was removed.

Park trespass issues were followed up with Building, Bylaw and Emergency Planning Services regarding an ongoing issue at Islewood Drive Community Park.

Staff met with the Director to review signage, GPS and map development assistance for community trail workers active on non-RDN trails in the Qualicum Bay-Bowser area.

Miscellaneous

Numerous park inspection visits and maintenance projects were conducted throughout the district including garbage removal, brushing and trail maintenance, new sign layouts and installations, and sign maintenance, and numerous information requests were received from the public.

Community Works Projects

Area B

The 85% design package for the Village Trail was submitted to MOTI for review and feedback. Comments received will be incorporated into the final design package.

Area C - East Wellington/Pleasant Valley

Due to the site challenges, current emphasis has shifted from constructing a road side path on Jingle Pot Rd to focus on improving the existing road side path on Meadow Drive. A letter was sent to MoTI to provide 1.5 metre paved shoulders on Jinglepot to improve the safety for pedestrian and cycling use.

Area F

Staff met with the Director to review initial trail projects at Carrothers and Price, and with the Director and POSAC members at site.

Cost estimates for moving surplus School Board 69 portables to Meadowood are being investigated in preparation for a Board report in November.

Area G

Parks staff met twice with MoTI, RCMP and SD69/Oceanside Elementary School to discuss possible improvements and solutions for pedestrian safety and vehicle congestion along Wembley Rd and Wright Rd near the school. Changes to two road intersections are expected in November (conversion to 4-way stops) that will affect traffic flow and may have an impact on the congestion in the area. Following implementation of these changes, a third meeting will be held to review any positive or negative outcomes. In terms of the Wembley Rd corridor, conversations are on-going as to the best approach for improving pedestrian safety along this route.

Area H

Staff worked with the lawyer to produce an agreement for use of Community Work Funds to fund improvements at the Lighthouse Community Centre. The agreement was forwarded to the Board of Directors for the Lighthouse Hall Community Centre for their review.

Regional Significant Gas Tax Project

Parks staff and Consultants hosted an Open House on Oct. 9th that saw over 150 attendees. Overall there is a lot of enthusiasm and support for the project. Concerns centred on the multi-use aspect of the trail and some concern over compatibility between different users. The trail is intended to be a multi-use trail open to walkers, cyclists, equestrians. Two stakeholder meetings also occurred in October; one with residents whose properties are bisected by the rail corridor and one with the Ministry of Transportation to discuss trail road crossings.

Prior to the Open House, staff appeared as a delegation at the City of Parksville's Council Meeting to introduce the project and the idea Springwood Park as a trailhead to the Rail Trail.

Regional Parks

Arboretum

Park staff removed garbage from the park entrance.

Arrowsmith CPR Regional Trail

Park Staff brought an engineer to the McBey Bridge for a bridge inspection.

Beachcomber Regional Park

The park entrance sign was pressure washed. Garbage was removed from the trails and a possible property encroachment was investigated.

Met with an original resident of Beachcomber to discuss how the property came about as park; exchanged historical information and made contacts of use for next year's work on the park management plan.

Staff coordinated the installation of a new kiosk structure at the entrance of Beachcomber Regional Park. Final sign boards will be installed in early November.

Benson Creek Falls Regional Park

Park Staff erected new signs for the parking lot and conducted trail maintenance. The parking patterns are being monitored and public inquiries are being responded to. Staff pressure washed park signs, removed signs from trees and removed trees crossing new trail through VIU property. Park Staff and GIS Staff completed GPSing the new trail leading the public to the park. The new trail is currently being reviewed by MFLNRO.

Big Qualicum Regional Trail

Park Staff and GIS Staff completed GPSing the trails.

Coats Marsh Regional Park

Park staff conducted park inspections and maintained trails.

Descanso Bay Regional Park

Park Staff and GIS Staff completed GPSing the park.

E&N Regional Trail

Trail counter data was collected.

Englishman River Regional Park

Park Staff carried out routine inspections of Englishman River Regional Park and Top Bridge Park. Staff responded to maintenance issues identified by the Volunteer Park Warden including; garbage issues, ATV trespass, vandalism, graffiti and suspect hazardous trees.

Staff installed a bike rail on a set of stairs near Allsbrook. Park staff pressure washed the kiosks, park identification signs and garbage cans. Staff brought an engineer to the Hatchery Bridge for a bridge inspection.

Worked with the BC Conservation Foundation on ways and means to remove, update and replace the old Steelhead Recovery Plan interpretive sign at the Long Run.

Horne Lake Regional Park

Park staff met with BC Park staff to discuss the BC Parks Caves Park parking lot issues. RLC continue to make park improvements such as sign installation, outhouse painting, generator maintenance and vapour barrier for the house. Coastal Fire Centre crew burned a debris pile for the park operator for training purposes.

Lighthouse Country Regional Trail

Parking lot upgrades were started at the Lioness trailhead. Park staff pressure washed the kiosks and garbage cans. Staff had approximately 11 hazardous trees removed along the trail by a contractor. Clarification was received from the Ministry of Forests that the RDN can direct the public across the Linx Rd railway crossing and so staff can proceed to develop the small parking lot at the Linx Rd end of the South Loop trail.

Little Qualicum River Estuary Regional Conservation Area

Park staff conducted invasive species removal within the conservation area. Staff worked with the BC Conservation Foundation and Ducks Unlimited Canada on a park use permit for adding vegetation to the fish channel area. Staff also liaised with the Province on the project. Parks staff were approached by the Mount Arrowsmith Biosphere Reserve as well as the Province on potential projects at the estuary and staff will explore options. Assistance was provided to CAGO in their goose strategy research (survey distribution, park data).

Little Qualicum River Regional Park

Parks Staff are preparing a report on the process and implications for transferring management of the private bridge over the LQR to the RDN. The bridge over the river is within the regional park, but has been managed privately through easement. The easement holder has expressed interest in dissolving the easement. The topic is complex because the roads on either side of the bridge are private, and the route may be important for emergency response. Currently the bridge is damaged and closed and the RDN must consider to what level it will be repaired – for emergency use or for pedestrian/park use. Staff brought an engineer to the Ozero Bridge for a bridge inspection.

Park staff conducted park inspections and maintained trails.

Moorecroft Regional Park

Park staff conducted park inspections and maintained trails. Bathroom repairs are being conducted at the Caretaker House. The Caretaker Agreement is being reviewed for renewal. A dogs in park information brochure is being developed to help educate people on the need to control dogs in the conservation covenant area. Dog patrols are being conducted weekly by Coastal Animal Control Services.

Morden Colliery Regional Trail

Park staff replaced vandalised signs at the Cedar Plaza trailhead. A contractor removed 3 hazard trees along the trail.

Mount Benson Regional Park

A contractor repaired the service road leading into the park.

Staff reviewed the draft park covenant with the lawyers and explored ways and means to move forward with a covenant in tandem with a management plan review. Covenant options were researched.

Nanaimo River Regional Park

Park staff planted 100 Douglas fir and 20L of donated Arbutus berries where a mower flailed broom and blackberry as a part of a restoration project.

Parksville - Qualicum Links

Park staff conducted trail inspections. Staff met with park neighbor regarding trees bordering Barclay Bridge.

Top Bridge

Park staff pressure washed the entrance sign.

Trans Canada Trail

Park staff pressure washed graffiti off the kiosk and sign post at the Spruston trailhead. Staff briefed new TCT BC staff on outstanding TCT financial commitments to the RDN and Cowichan Valley Regional District in respect of the proposed joint Timberlands Road trailhead upgrade.

Witchcraft Lake Regional Trail

Park staff conducted trail inspections.

Fairwinds Lakes District - Regional Park Management Plan

Staff and project consultants met with community and Council members from the Snaw-naw-as First Nation to discuss the cultural and historical significance of the lands within the Fairwinds Lakes District as they pertain to future park development and management. Preparations were also completed for the first Advisory Committee meeting and the first Open House event in November.

Morden Colliery Bridge

Staff completed a report to the Regional Board outlining the key findings of an updated feasibility study for a bridge crossing over the Nanaimo River (within the Morden Colliery Regional Trail corridor), with recommendations on bridge structural type and accessibility. The study and staff recommendations were approved by the Board in October. Subsequent design development will therefore proceed under a steel truss bridge option, while an option for equestrian accessibility will be vetted through the public.

Miscellaneous

Staff installed high water signage at all parks with rivers entrances. Staff also installed lock out crime signs in the regional parking areas.

Staff completed a survey on Important Bird Area areas. The survey is looking for perspectives on recreational disturbance of birds populations.

Staff assisted a University of Victoria graduate student working with the Capital Regional District on researching front country and back country camping trends and "best practices" campground management policies.

Staff continued to provide support to an in-camera land acquisition for potential Regional Park.

Staff continued to work with the Province with regards to a 30-year Crown Land Lease application for the Morden Colliery Regional Trail and a Premature Lease Renewal for Benson Creek Falls Regional Park.

Work continued on the new Parks Building lease with signing expected in November. The building is under construction and staff have met with the builder to review any issues.

Trail Counter Information

Month	BRP #1	BRP #2	Carrothers Trail	E&N Trail #2	E&N Trail Lowery Rd.	Moorecroft La Selva Place
2014-06-01	3,375	727	1,530	85	1,168	1,113
2014-07-01	593	442	1,174	73	63	1,010
2014-08-01	2,341	558	99	114	20	1,017
2014-09-01	1,258	216	47	210	43	830
2014-10-01		237	52		41	817

2015 Budget Development

Staff continued working on the 2015 budget input including developing the 5 year financial plan, capital plan and the business plans.

Park Use Permits and Events

- RDN Water Services PUP for school group watershed tours in October: two at Nanaimo River RP and one at ERRP.
- Renewal of PUP for student monitoring of water quality and benthic invert sampling (VIU Restoration Biology Program under direction of Margaret Wright, DFO) over Oct-Dec, 2014 at ERRP.
- CMRA PUP for family Halloween event, Oct 31st at Meadowood Community Park. As the event anticipated over 600 people, a Special Occasion Permit was also required through Corporate Services.
- BCCF PUP for planting of 150 2-gal size native shrubs and trees at LQRE, with staff and Qualicum Streamkeeper volunteers planned for November.

Staff Training

Staff attended a two-day seminar on Community-Based Social Marketing. The seminar presented the process for uncovering barriers to behaviours we want to encourage (e.g. walking to school, using public transit) and developing programs to encourage or change the behaviour. This is viewed as a more effective means of accomplishing changes in behaviour than simply providing information through brochures, which is the common approach.

Recommendations

That the Parks Update Report for October 2014 be received as information.



Manager of Parks Services



General Manager Concurrence



RDN REPORT		PA
CAO APPROVAL		
EAP		
COW		
OCT 14 2014		
RHD		
BOARD		

MEMORANDUM

TO: Wendy Marshall
Manager of Parks Services

DATE: October 8, 2014

FROM: Lesya Fesiak
Parks Planner

FILE:

SUBJECT: Nanaimo River Pedestrian Crossing at Morden Colliery Regional Trail Feasibility Study

PURPOSE

To provide information and recommendations regarding the updated Feasibility Study for the Nanaimo River Pedestrian Crossing at the Morden Colliery Regional Trail.

BACKGROUND

In March, 2014, Harold Engineering was retained by the Regional District of Nanaimo (RDN) to evaluate and update a 1999 report by Graeme and Murray Engineering which assessed the feasibility of constructing a pedestrian bridge over the Nanaimo River within the Morden Colliery Regional Trail corridor (Appendix I - Project Location).

The updated study, completed in September 2014 (Appendix III), involved preliminary geo-technical and hydro-technical assessment, as well as topographic surveys of the proposed bridge location and an undeveloped portion of trail corridor (a 1km stretch from the west bank of the river and eastward to Cedar Road). Detailed bridge and trail design, along with final geo-technical and hydro-technical analysis, will be carried out by Harold Engineering as a second phase of project development.

The Regional District currently holds a non-exclusive, 20-year License of Occupation (1995-2015) for the six Crown parcels that constitute the Morden Colliery Regional Trail; an application to the Province for an exclusive, 30-year Lease (2015-2045) is currently in progress. Future bridge development and trail expansion, which would provide an important active transportation link between the communities of South Wellington and Cedar, would proceed only once the Crown Lease is secured.

A pedestrian crossing over the Nanaimo River within the historical Morden Colliery rail corridor (now the Morden Colliery Regional Trail) has been noted as a priority item in several RDN planning documents and studies, including the Area 'A' Community Trails Study (2001), the Regional Parks and Trails Plan (2005), and the Area 'A' Active Transportation Plan (2009).

DISCUSSION

The purpose of the 2014 feasibility study was to provide the RDN with updated bridge design options, information on required bridge spans and current cost estimates. Project parameters for both studies included “front country” trail conditions, accessibility for multiple user groups, and two separate steel bridge spans over the west and east channels of the Nanaimo River (a single span over both channels and the central island would be structurally and financially impractical). Aluminum structures were not deemed appropriate for the site because of longer span requirements and increased costs.

Conceptual bridge design drawings from the updated study are included as Appendix II. An overview and comparison of the 1999 and 2014 studies is provided below:

	1999 FEASIBILITY STUDY	2014 FEASIBILITY STUDY
Bridge Options	Steel Truss or Cable Suspension	Steel Truss or Cable Suspension
Bridge Accessibility	pedestrian, cyclist, equestrian	pedestrian, cyclist, equestrian, wheelchair
Span Lengths	70m - west span 50m - east span	90m - west span 84m - east span
Deck Width	1.2 m	2.1m
Deck Elevation	200 year flood level (Q200) = 10.75m bridge deck 2m above Q200 levels	200 year flood level (Q200) =10.75m bridge deck 1.5m above Q200 levels
Total Cost - Suspension (two bridges)	\$412,000 pedestrian, cyclist, equestrian	\$1,137,000 pedestrian, cyclist \$1,277,000 pedestrian, cyclist, wheelchair \$1,417,000 pedestrian, cyclist, wheelchair, equestrian
Total Cost - Truss (two bridges)	\$486,000 pedestrian, cyclist, equestrian	\$1,473,000 pedestrian and cyclist \$1,473,000 (no difference) pedestrian, cyclist, wheelchair \$1,623,000 pedestrian, cyclist, wheelchair, equestrian
Study Recommendation (Truss vs Suspension)	Steel Truss: rigid, durable, less maintenance and long-term costs, reminiscent of rail bridges	Cable Suspension: lower construction costs, design aesthetics

The sizable cost increase from the 1999 study (even with inflation taken into account) is explained in the updated study as being partially due to longer bridge spans (as a result of probable bank erosion and wider river channels), and partially due to a larger contingency (30% in 2014 vs 10% 1999). However, each study also employed different design standards for trail and bridge development, which would have significant impact on the overall length of both the bridge structures and the approaches.

Although the 2014 study provides three separate cost estimates for bridge accessibility type, Harold Engineering developed the overall conceptual bridge design based on an assumption of wheelchair accessibility. Bridge approaches and deck would therefore need to be longer in order to accommodate a gentler slope (max 8%). The 1999 study, which did not take wheelchair access into account, proposed steeper “timber construction ramping” at the bridge approaches.

ALTERNATIVES

1. That the updated Nanaimo River Pedestrian Crossing at the MCRT Feasibility Study be received to use as a guiding document for the future development of a bridge crossing within the Morden Colliery Regional Trail corridor and subsequent design and assessment work proceed under the Steel Truss Bridge option.
2. That the updated Nanaimo River Pedestrian Crossing at the MCRT Feasibility Study be received to use as a guiding document for the future development of a bridge crossing within the Morden Colliery Regional Trail corridor and subsequent design and assessment work proceed under the Cable Suspension option.
3. That the updated Nanaimo River Pedestrian Crossing at the MCRT Feasibility Study be received and alternative direction be provided.

FINANCIAL IMPLICATIONS

The estimated costs for bridge construction range from \$1,137,000 for a Cable Suspension bridge option (pedestrian and cyclist only), to \$1,623,000 for the Steel Truss bridge option (pedestrian, cyclist, wheelchair and equestrian). Additional trail improvement costs are estimated at roughly \$250,000. Approximately \$1,200,000 has been set aside within the Regional Parks and Trails Capital Budget with the assumption that grant funding will help finance the project.

Although a Steel Truss Bridge is more expensive than a Cable Suspension Bridge when considering initial construction costs, both studies note that the truss structure has several advantages: a rigid bridge deck with less bounce, a durable surface that is less vulnerable to vandalism, and lower maintenance costs. The truss form, as noted in the 1999 study, is also common in rail bridge design, which reflects the historical use of the bridge site and trail corridor. It is therefore recommended that the Truss Bridge option be favoured over the Cable Suspension option for subsequent project development.

Although there is a nominal construction cost difference between the bridge accessibility types, an equestrian accessible option has implications for higher long-term maintenance costs. The updated study recommends thick, wood decking, which is necessary for an equestrian crossing. The wood decking, which is estimated at \$80,000 for two bridge spans, needs to be replaced every 10 years, on average. Several RDN bridges, however, use metal mesh surfacing (not wood decking) and these require minimal maintenance and repair. The Millennium Bridge over French Creek has needed no major repairs or replacements in almost 15 years. It is unclear without further consultation what level of equestrian use the bridge and new trail would receive. While there are many equestrians in the area, it is unclear whether this route is popular with equestrians and whether the crossing would be draw as an equestrian route.

STATEGIC PLAN IMPLICATIONS

A bridge over the Morden Colliery was identified in the 2005 Regional Parks and Trails Plan and in the Area 'A' Active Transportation Plan (2009). With the development of a bridge crossing over the Nanaimo River, and a trail connector between the communities of South Wellington and Cedar, the Morden Colliery Regional Trail will function as a true green highway, helping to reduce greenhouse gas emissions from automobile use while promoting active transportation in the local community. It also will enhance recreational opportunities for a variety of users. The location of the trail staging area next to the Morden Colliery tipple could provide a tourism draw with opportunity to view the historic structure then take the trail to downtown Cedar and Hemer Provincial Park.

SUMMARY

An updated feasibility study for a future crossing over the Nanaimo River, and within the Morden Colliery Regional Trail corridor, was completed by Harold Engineering in September 2014. The study outlines current cost estimates, information on required bridge spans and updated bridge design options.

Construction costs are estimated between \$1,137,000 and \$1,623,000, depending on bridge accessibility and structural type. The Cable Suspension Bridge option, when compared to the Steel Truss Bridge option, has lower construction costs, but higher long-term maintenance costs. Similarly, an equestrian accessible bridge has only nominally higher construction costs when compared with other design types but significantly higher long-term costs associated with bridge and trail maintenance. It is unclear what level of equestrian use the bridge would receive.

Although the Herold study recommends the Cable Suspension Bridge option, when considering initial construction costs, both studies note that the truss structure has several advantages: a rigid bridge deck with less bounce, a durable surface that is less vulnerable to vandalism, and lower maintenance costs. The truss form, as noted in the 1999 study, is also common in rail bridge design, which reflects the historical use of the bridge site and trail corridor. It is therefore recommended by staff that the Truss Bridge option be favoured over the Cable Suspension option for subsequent project development.

RECOMMENDATIONS

1. That the updated Nanaimo River Pedestrian Crossing at the MCRT Feasibility Study be received to use as a guiding document for the future development of a bridge crossing within the Morden Colliery Regional Trail corridor.
2. That subsequent design and assessment work proceed under the Steel Truss Bridge option.
3. That the equestrian accessible bridge option be vetted through local residents and equestrian groups prior to subsequent design work in order to ensure public support and user demand in consideration of higher construction and maintenance costs.



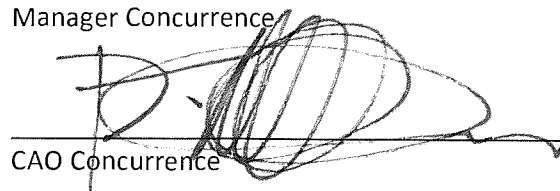
Report Writer



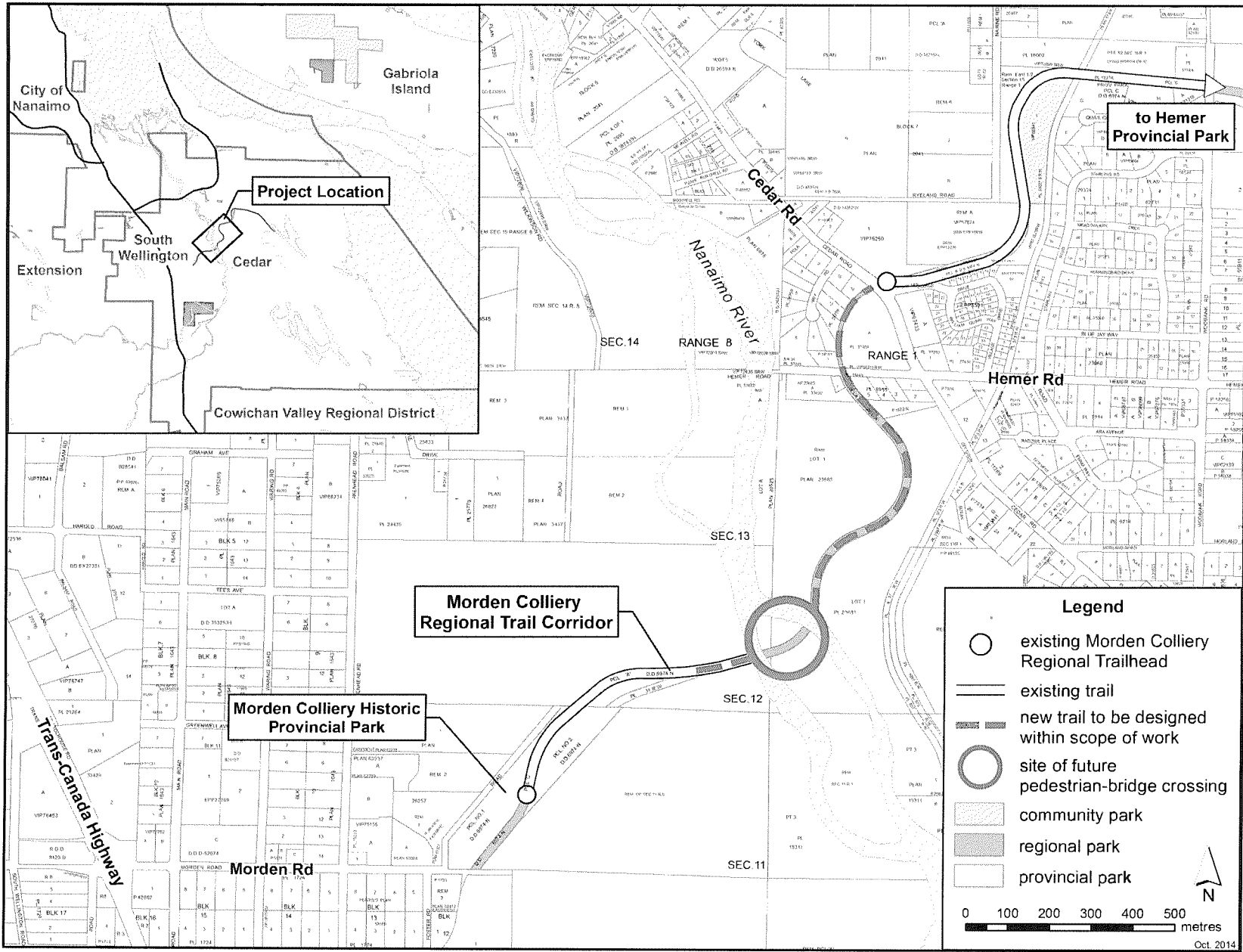
General Manager Concurrence



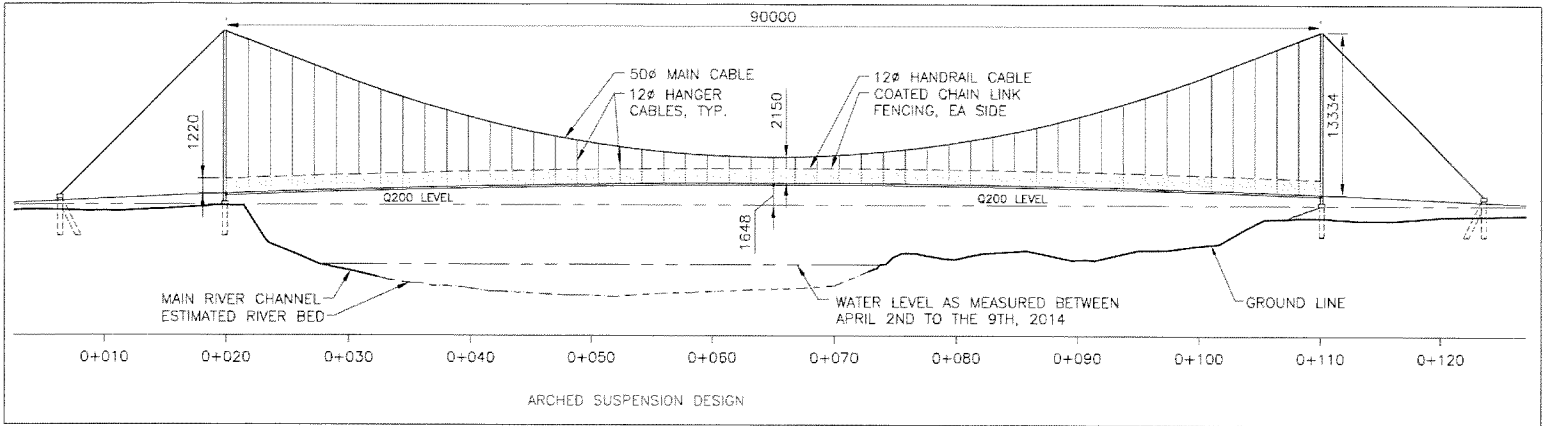
Manager Concurrence



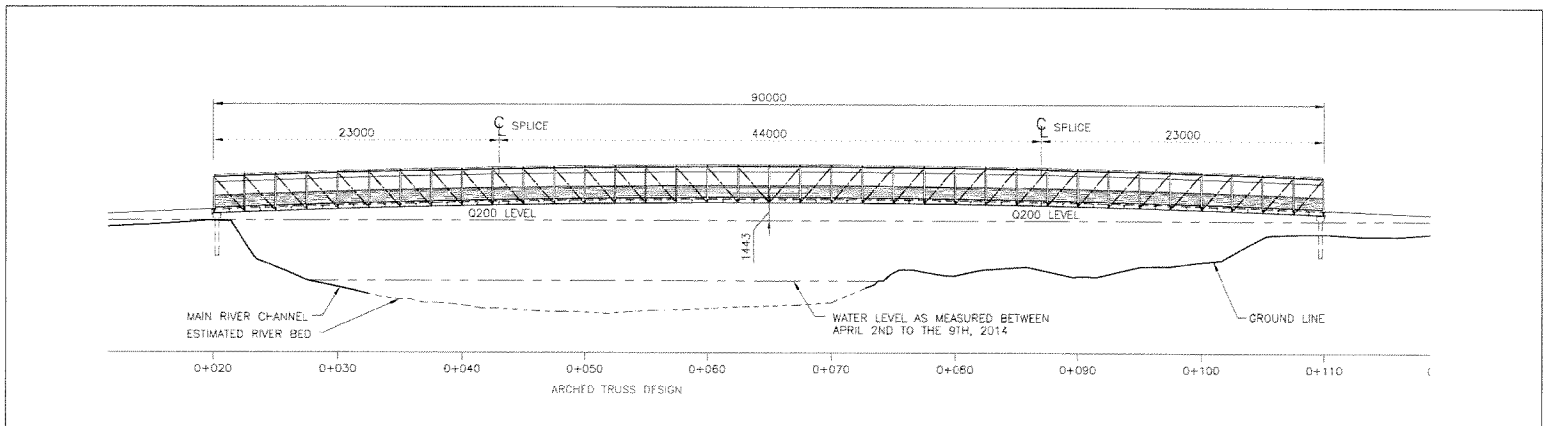
CAO Concurrence



Appendix II – Bridge Design Options



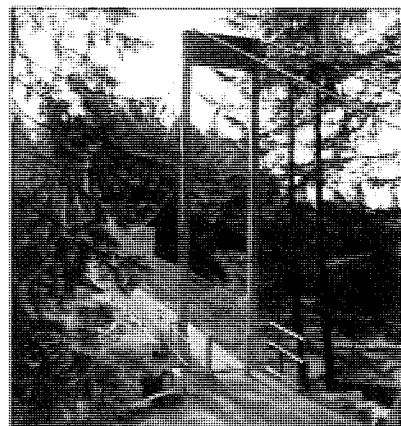
Suspension Bridge Option: conceptual design drawing depicting potential river crossing at the MCRT (Harold Engineering).



Steel Truss Bridge Option: conceptual design drawing depicting potential river crossing at the MCRT (Harold Engineering).



Example of completed Steel Truss Bridge
 (photo: Harold Engineering)



Example of completed Suspension Bridge
 (photo: Harold Engineering)

Appendix III –

**Nanaimo River Pedestrian Crossing
at Morden Colliery Regional Trail
Feasibility Study**



FEASIBILITY STUDY

Nanaimo River Pedestrian Crossing at Morden Colliery Regional Trail

submitted to



The Regional District of Nanaimo
Recreation & Parks Department

830 West Island Highway
Parksville, BC V9P 2X4

September 12 2014

Morden Colliery Regional Trail Bridges

Feasibility Study

The Regional District of Nanaimo

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Appendix A - Drawings

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1 PROJECT SUMMARY

For this project, Herold Engineering was retained by the Regional District of Nanaimo's Recreation and Parks Department (RDN) to review the site at the Nanaimo River and Morden Colliery Regional Trail in order to determine the feasibility of constructing a pedestrian crossing.

In order to prepare the feasibility report, Herold Engineering conducted a topographic survey of the trail and proposed bridge location within the RDN's right-of-way and visited the site to review potential placement of bridges. Additionally, we visited the site with representatives from Lewkovich Geotechnical Engineering and Northwest Hydraulics Consultants Ltd to conduct a preliminary feasibility review of the ground conditions, slope stability and potential flood issues.

The intent of this study was to re-visit the 1999 feasibility report, obtain current topographic information and generate two design concepts along with order of magnitude cost estimates for each concept.

2 SITE DESCRIPTION AND HISTORY

2.1 Previous Bridges

It is our understanding that the site was used previously as a rail bridge crossing in order to carry coal from the Morden site to waterfront barges in Boat Harbour. Signs of coal deposits are evident in the centre bank of the river crossing and previous abutments are still partially visible.

2.2 Trail Design and Bridge Approaches

As related work, the RDN is undertaking the planning of a trail that would re-connect the communities of South Wellington and Cedar which are currently separated by the Nanaimo River. The RDN's "Parks and Trails Guidelines, January 2014" is being used as the design basis for the trail and the proposed bridges. Should detailed design of the bridges go ahead, Herold Engineering would include design of the approach trails as part of the scope of work. No costing information for the trails is included in this study as it deals only with the river crossing.

2.3 1999 Feasibility Study

A 1999 feasibility study prepared by Graeme & Murray engineering consultants along with EBA engineering consultants and J.E. Anderson (Surveyors) indicated that either a cable suspension bridge or a steel truss bridge would be feasible in this location. For funding reasons the project was not implemented at that time but is now being re-visited.

The 1999 feasibility study anticipated spans of 70m on the west channel and 50m on the east channel. Either the river has widened by erosion in the past 15 years or the proposed location for bridges in 1999 was different. Our survey within the right-of-way indicates that a 90m span would be required on the West channel and an 84m span would be required on the secondary East channel.

3 PRELIMINARY GEOTECHNICAL ASSESSMENT

3.1 Bridge Foundation Feasibility

For this assignment, Herold Engineering retained Lewkowich Geotechnical to visit the site and provide preliminary comments on the feasibility and design constraints for bridge foundations

Based on the site review, it is expected that the most cost-effective and practical means to support the bridge structures would be driven piles. Given the presence of fill materials within the abandoned railway berm, typical spread footings are not recommended.

It is anticipated that the naturally deposited subgrade conditions will be favourable, and will provide competent bearing conditions at relatively shallow depths. It is also anticipated that the subgrade will consist of a layer of coarse, dense, sand, gravel, and cobbles overlying bedrock. The depth to bedrock could be determined through a series of bore holes, if required during the detailed design phase.

4 PRELIMINARY HYDRO-TECHNICAL ASSESSMENT

4.1 Previous Flood Elevation Data

The 1999 feasibility study indicated that the Q200 flood level elevation would be 10.75m geodetic. The May 15 site visit by Herold Engineering and NHC as well as an initial desktop study for this report indicate that 10.75m is an appropriate estimate of the 200 year flood level. It is therefore likely that a 200 year flood event would overtop the banks of the river at the location of the proposed crossing structures. For this reason, foundations will have to be on piles. It is not recommended that spread footing be used based on Hydro-technical constraints.

The trail that approaches the bridge will be subject to washout in large flood events. Trail maintenance plans should take this into consideration. This constraint applies to both conceptual designs. It should be noted that to maintain 1.5m above the Q200 for the entire length of the bridges would require significant amounts of trail fill at each end of the bridge; for this reason final designs would incorporate a significant camber to minimize approach fills.

4.2 Potential Hydro-Technical constraints

As part of the detailed bridge design process, hydrotechnical input will be required to assess key components such as the channel reach stability, localized bank stability and scour risk, construction levels above the design flood, as well as provide input to the bridge design (e.g. abutment locations, flood proofing). In addition, the proposed crossing which is located on an island significantly increases the complexity of the hydrotechnical engineering. Issues include longer bridge segments, increased protection works to maintain flows in two separate channels, and stability concerns at the island that are difficult to predict. Deep pilings set back from the current channel banks with reduce the hydrotechnical risks at the site to some degree.

5 CONCEPTUAL DESIGNS

5.1 Design Alternatives

Two conceptual design options were considered for this report

- A steel truss bridge
- A steel cable suspension bridge with a semi-rigid deck and steel towers

It should be noted that an Aluminum structure, while offering better corrosion resistance and possibly better Aesthetics, was not considered for this report because the spans required would make an Aluminum structure costly compared to the other two options. Additionally, an aluminum structure would have to be sizeable. Aluminum has roughly ½ the strength of steel when welded and therefore requires that design stresses be halved to achieve the same span.

Upon reviewing the site conditions, right-of-way alignment and topography Herold Engineering concluded that two separate spans would be most appropriate for this site, rather than a single structure as indicated in the 1999 feasibility report. Two span designs are feasible with either the suspension bridge option or the steel truss option.

Appendix B provides conceptual designs for each type of bridge and each span. For the purposes of this feasibility report, a 90m west channel span and an 84m side-channel span were used. Final Hydro-Technical design may dictate that other spans are required, but for the purpose of comparing the two options, these spans were deemed appropriate and likely to be close to the final design requirements.

5.2 Design Assumptions and Constraints

The conceptual designs are based on the assumption that access by the general public is required. The conceptual design approach assumes “front country” trail access by pedestrians, cyclists as well as horses or wheelchairs (the latter 2 being optional costs that the RDN is considering). It should be noted that more economical structures are possible but would require stairs or ladders that would be more applicable to “back-country” trail access (such as would be found on the West Coast trail for example). A cable suspension bridge with a “sag-deck” or flexible deck would be most economical but due to the relatively shallow river structure at this site, would require towers and stairs at each end.

Required bridge widths were not specified by the RDN for the feasibility stage of this project, so we have designed to minimum widths required for structural strength. Because the suspension bridge option uses sway cables, a slightly narrower deck width is possible (this advantage is lost however for the wheelchair or equestrian option, since a wider bridge would be required than the minimum structural requirement).

The global design loading used for both conceptual options is 2.4 kPa (50 psf), which slightly exceeds what is required by the Canadian Highway Bridge Design code for pedestrian areas on spans of this size. Local bridge components would be designed to carry up to 4.8 kPa (100 psf), or larger point loads if the Equestrian option is pursued.

It should be noted that the final design of either type of structure may be governed to a large degree by limiting the dynamic movement (or “bounce”) of the structure to within tolerable limits. The limits will depend on the type of access desired. A fully accessible structure would require much more stringent dynamic design criteria, whereas a back-country type of structure aimed at providing some “adventure” appeal would allow for more bounce and therefore lower cost. The costs presented in this report are aimed at a moderate level of bounce or “front-country” type of trail design for use by the general public. Further discussions would be required to determine the final design criteria before starting detailed design.

6 INDICATIVE COST ESTIMATES

The following cost estimate has been prepared for Bridge work only. We understand that the RDN is contemplating trail upgrades as well; however this study does not include an assessment of trail costs.

6.1 Cable Suspension Bridges

The order of magnitude cost estimate for the cable suspension bridge option (90m span + 84m span) is **\$1,137,000.00**. Details of our estimate are provided in Appendix C.

The additional costs for the Wheelchair access option are estimated at **\$140,000.00** (roughly 10% for a wider deck)

The additional costs for the Equestrian + Wheelchair option are estimated at **\$280,000.00** (roughly 20% for a wider deck and thicker deck boards)

6.2 Steel Truss Bridges

The order of magnitude cost estimate for the steel truss bridge option (90m span + 84m span) is **\$1,473,000.00**. Details of our estimate are provided in Appendix C.

The additional costs for the Wheelchair access option are estimated at **\$0.00** (base design can be made to accommodate Wheelchair traffic)

The additional costs for the Equestrian + Wheelchair option are estimated at **\$150,000.00** (roughly 10% for thicker deck boards and additional deck stringers)

6.3 Cost Comparison to 1999 report

The estimates are considerably higher than the 1999 feasibility study indicated (even if inflation is taken into account). The extra costs are partially attributed to the longer spans required under this study versus the 1999 study. It is also possible that the trail right of way was planned for a different location in 1999.

6.4 Limitations and Cost Risks

The cost estimates provided in this study are intended to be order of magnitude only and are based on preliminary design and site data. Any project planning, budgeting or funding requests that are undertaken based upon this report should carry adequate contingencies to allow for unforeseen circumstances that may occur as the project proceeds. Based on the preliminary data and site conditions, we recommend a 30% project contingency at this stage (on top of the estimates given in section 6), which could be reviewed as detailed design proceeds

The main area of cost risk for this project is the geotechnical subsurface conditions. While some of this risk is mitigated by using piled foundations, the elevation of bedrock in Nanaimo can vary significantly in a single project site. It is possible that piles could be driven a relatively short distance and then founded in bedrock, it is also possible that the bedrock could slope significantly and piles on the centre island could be driven a significant depth. Access to drive piles on the West banks should be relatively straight forward, access onto the centre island is feasible at low water levels (channel was nearly dry at the time of our last site visit). Access onto the East bank (Morden Colliery side) may be difficult and also represents a cost risk to the project.

7 RECOMMENDATIONS

7.1 Cost-Benefit Analysis

In order to evaluate the benefits of each concept, the following matrix is used, each dot represents that the listed design option is preferred for the criteria being considered:

	Suspension Bridge	Truss Bridge
Initial Construction Cost (40%)	•	
Aesthetics (20%)	•	
Maintenance (15%)		•
User Comfort (15%)		•
Resistance to Vandalism (10%)		•

The evaluation matrix indicates a slight preference of 60 points to the Suspension bridge.

7.2 Recommended Design

Because of the significant difference in initial construction cost between the two concepts studied and the relatively similar performance characteristics of the options, **we recommend that the suspension bridge option be adopted as the preferred design**, should the RDN elect to proceed further with the project.

Signed,

Steve Scott, P.Eng., P.E.
 Principal
 Herold Engineering Limited

APPENDIX A – Site Photos



View Looking towards West bank from centre island



Log jamb on centre island



View from East bank towards centre island



Upstream View of West Channel



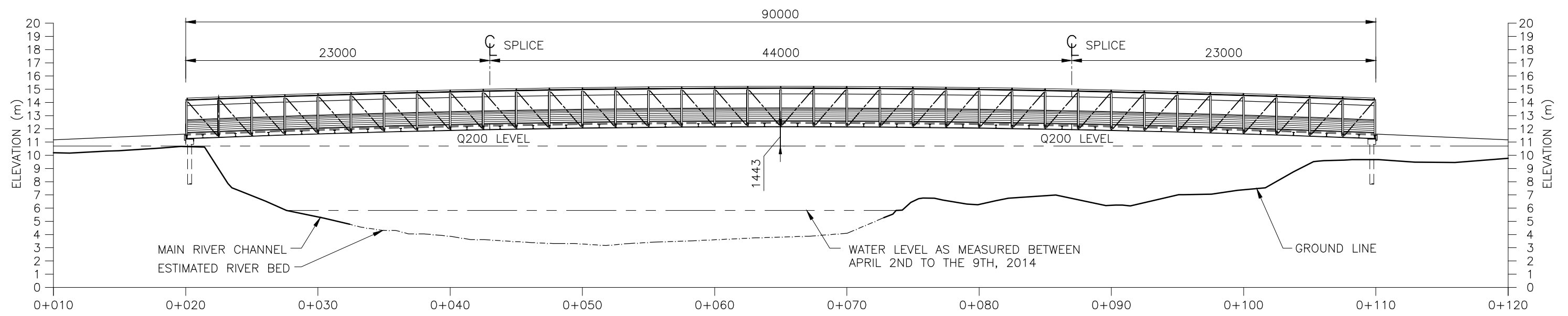
View of centre island from West bank



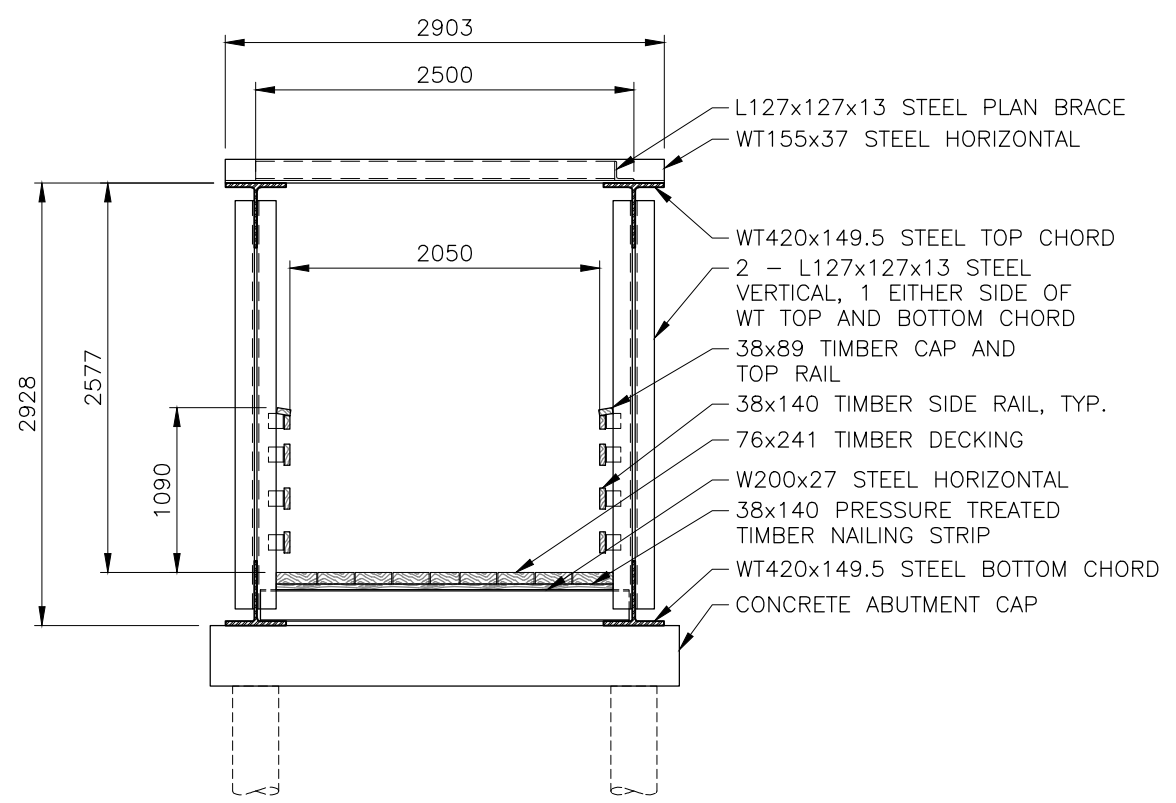
Upstream view from West bank

APPENDIX B – Drawings

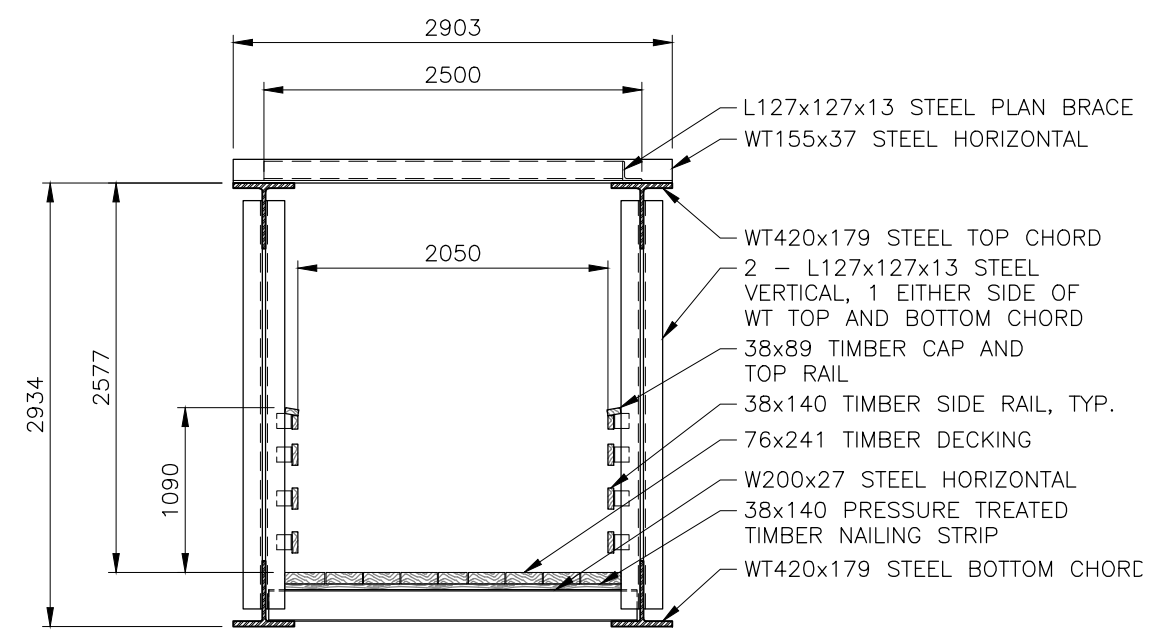
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ARCHED TRUSS DESIGN
ELEVATION – WEST CHANNEL BRIDGE
 1:300



AT ENDS (BALLAST WALL NOT SHOWN FOR CLARITY)
TYPICAL SECTION
 1:50



AT MIDSPAN
TYPICAL SECTION
 1:50

FEASIBILITY
 STUDY

NOT FOR
 CONSTRUCTION

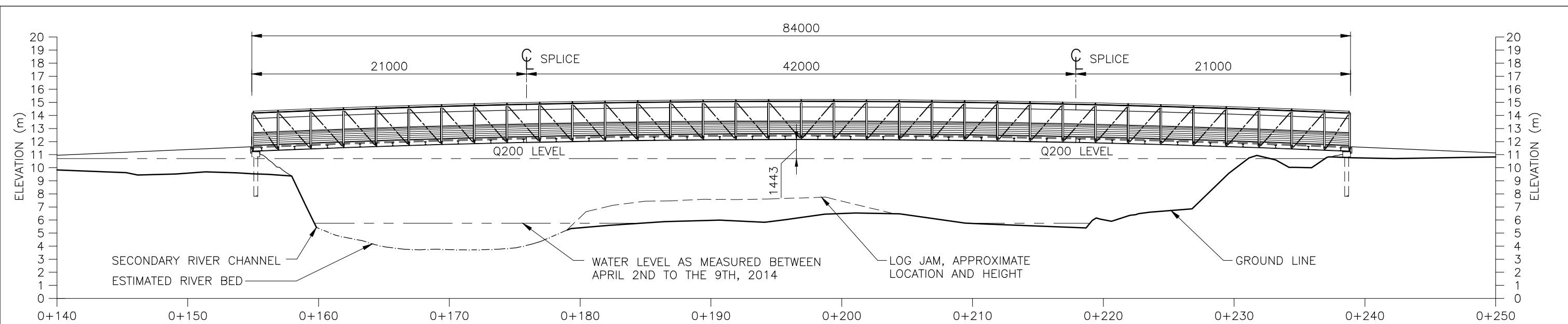
ISSUES		
No.	DATE	ISSUED FOR
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B	2014.08.22	REVISED
C	2014.09.12	REVISED

3701 Shenton Rd, Nanaimo, BC V9T 2H1
 Tel: 250-751-8558 Fax: 250-751-8559
 Email: mail@heroldengineering.com

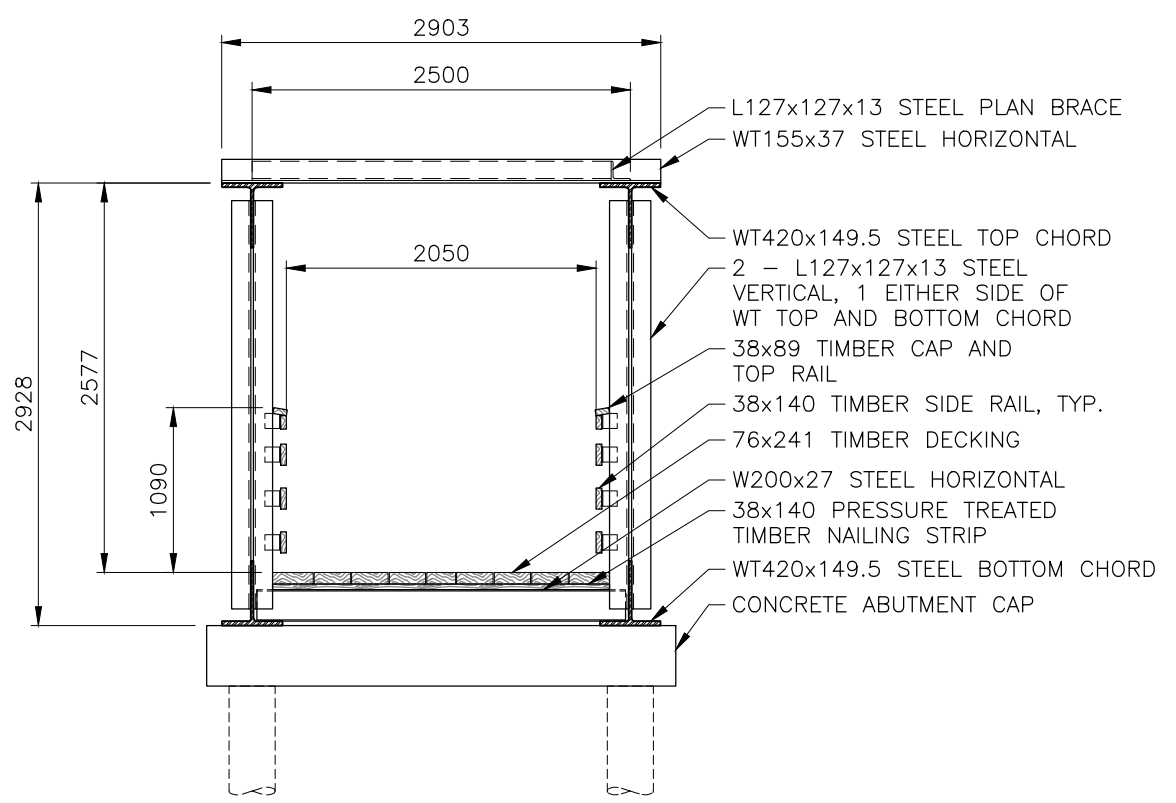
**MORDEN COLLIERY
 TRAIL AND BRIDGES
 CONCEPT OPTION 1
 ARCHED TRUSS
 BRIDGE 1 90m SPAN**

DRAFTED PHU	SCALE AS SHOWN	PROJECT No. 0837-029	HEL DRAWING No. SK1B	REVISION C
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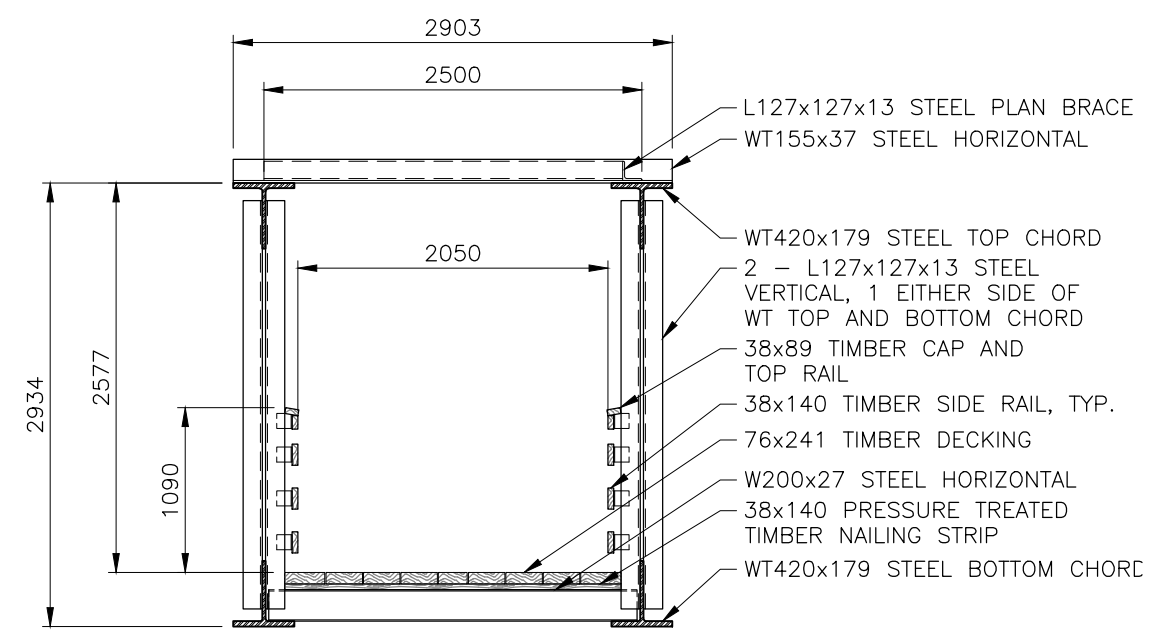
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ARCHED TRUSS DESIGN
ELEVATION – EAST CHANNEL BRIDGE
 1:300



AT ENDS (BALLAST WALL NOT SHOWN FOR CLARITY)
TYPICAL SECTION
 1:50



AT MIDSPAN
TYPICAL SECTION
 1:50

FEASIBILITY
 STUDY

NOT FOR
 CONSTRUCTION

ISSUES		
No.	DATE	ISSUED FOR
A	2014.06.13	FEASIBILITY STUDY
B	2014.08.22	REVISED
C	2014.09.12	REVISED

3701 Shenton Rd, Nanaimo, BC V9T 2H1
 Tel: 250-751-8558 Fax: 250-751-8559
 Email: mail@heroldengineering.com

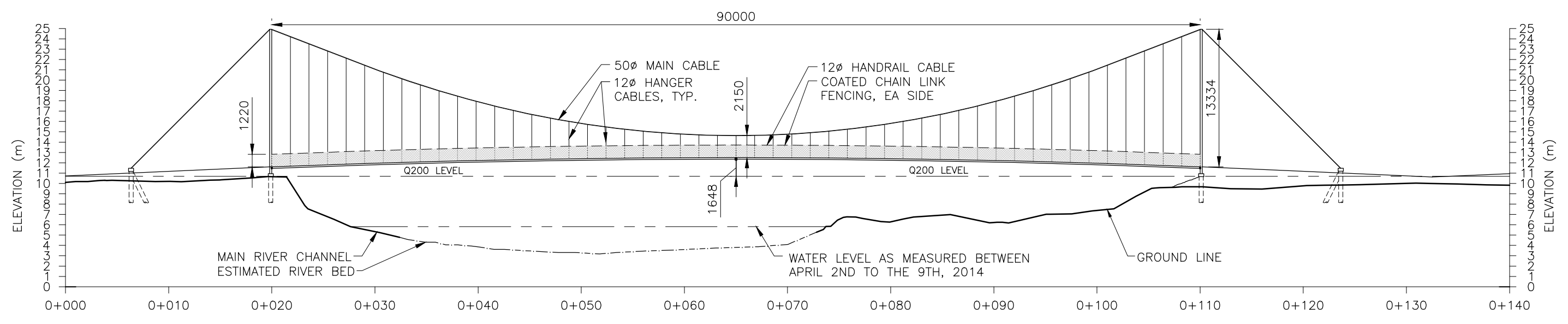
**MORDEN COLLIERY
 TRAIL AND BRIDGES
 CONCEPT OPTION 1
 ARCHED TRUSS
 BRIDGE 2 84m SPAN**

PROJECT No.
 0837-029

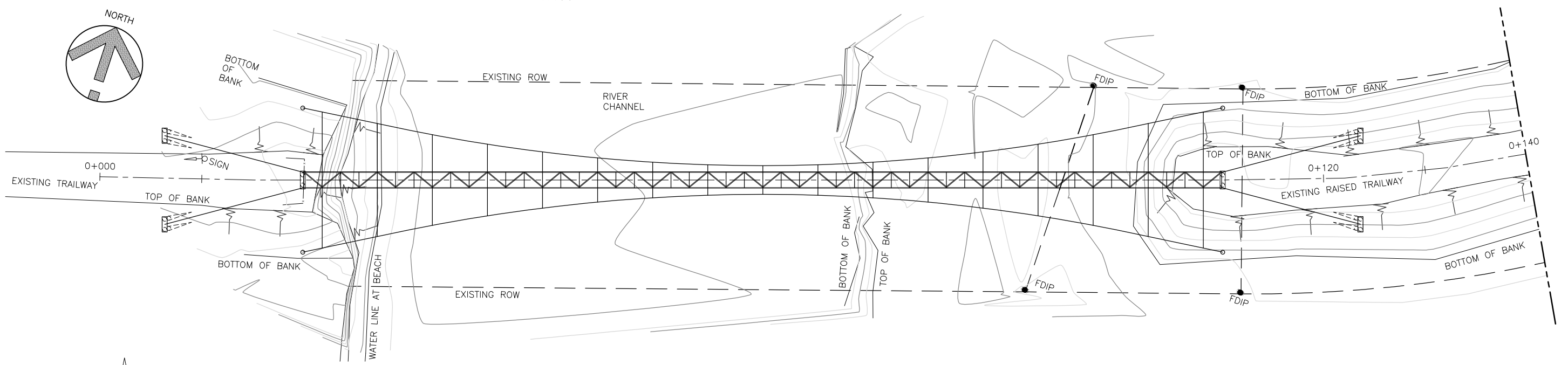
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SK2B

REVISION
 C

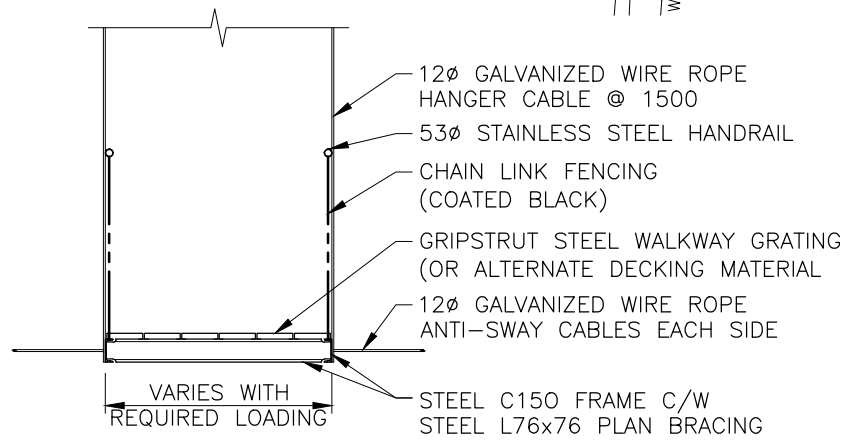
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ARCHED SUSPENSION DESIGN
ELEVATION – WEST CHANNEL BRIDGE
 1:400



PLAN – WEST CHANNEL BRIDGE
 1:400



TYPICAL SECTION
 1:50

FEASIBILITY
 STUDY

NOT FOR
 CONSTRUCTION

ISSUES		
No.	DATE	ISSUED FOR
A	2014.06.13	FEASIBILITY STUDY
B	2014.08.22	REVISED
C	2014.09.12	REVISED

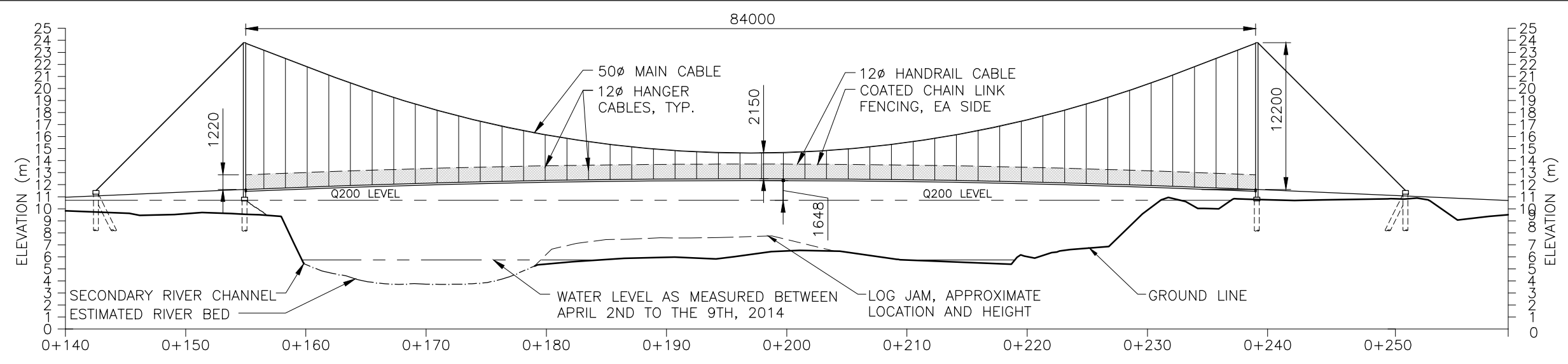
HEROLD ENGINEERING
 3701 Shenton Rd, Nanaimo, BC V9T 2H1
 Tel: 250-751-8558 Fax: 250-751-8559
 Email: mail@heroldengineering.com

**MORDEN COLLIERY
 TRAIL AND BRIDGES
 CONCEPT OPTION 2
 ARCHED SUSPENSION
 BRIDGE 1 90m SPAN**

DRAFTED PHU	SCALE AS SHOWN	PROJECT No. 0837-029	HEL DRAWING No. SK3B	REVISION C
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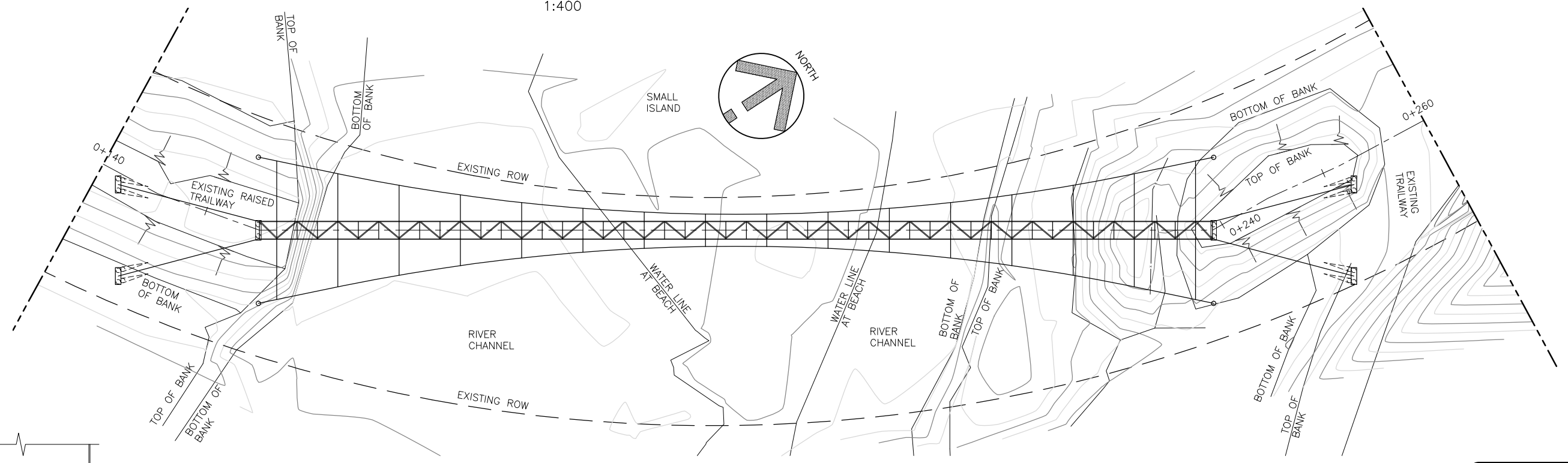
DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION

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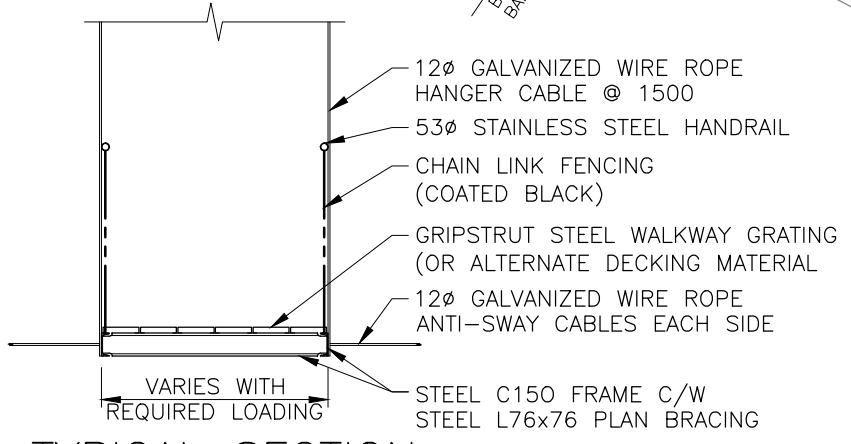
ARCHED SUSPENSION DESIGN
ELEVATION – EAST CHANNEL BRIDGE

1:400



PLAN – EAST CHANNEL BRIDGE

1:400



TYPICAL SECTION

1:50

FEASIBILITY STUDY

NOT FOR CONSTRUCTION

ISSUES		
No.	DATE	ISSUED FOR
A	2014.06.13	FEASIBILITY STUDY
B	2014.08.22	REVISED
C	2014.09.12	REVISED

HEROLD ENGINEERING
 3701 Shenton Rd, Nanaimo, BC V9T 2H1
 Tel: 250-751-8558 Fax: 250-751-8559
 Email: mail@heroldengineering.com

MORDEN COLLIERY TRAIL AND BRIDGES
 CONCEPT OPTION 2
 BRIDGE 2 84m SPAN

DRAFTED PHU	SCALE AS SHOWN	PROJECT No. 0837-029	HEL DRAWING No. SK4B	REVISION C
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DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION

APPENDIX C – Cost Estimates

Project Name: MODERN COLLIERY TRAIL BRIDGES - TRUSS OPTION

BRIDGE ORDER OF MAGNITUDE COST ESTIMATE					
Item#	Description of Work	Unit of Measure	Approx. Quantity	Unit Price	Extended Amount
02.	SECTION 2 - BRIDGE				
02.01	Mobilization	<i>L.S.</i>	<i>1</i>	<i>\$100,000.00</i>	<i>\$100,000.00</i>
02.02	Foundation Excavation				
<i>02.02.01</i>		<i>L.S.</i>	<i>1</i>	<i>\$16,000.00</i>	<i>\$16,000.00</i>
02.03	Backfill				
<i>02.03.01</i>	Bridge End Fill	<i>Cubic Meter</i>	<i>40</i>	<i>\$80.00</i>	<i>\$3,200.00</i>
02.04	Steel Pipe Piling				
<i>02.03.01</i>	Mobilization	<i>L.S.</i>	<i>1</i>	<i>\$50,000.00</i>	<i>\$50,000.00</i>
<i>02.03.02</i>	Material Supply	<i>Metre</i>	<i>132</i>	<i>\$75.00</i>	<i>\$9,900.00</i>
<i>02.03.03</i>	Driving	<i>Metre</i>	<i>120</i>	<i>\$400.00</i>	<i>\$48,000.00</i>
<i>02.03.04</i>	Socketing	<i>Metre</i>	<i>12</i>	<i>\$1,500.00</i>	<i>\$18,000.00</i>
02.05	Reinforcing Steel				
<i>02.05.01</i>	<i>Uncoated - Pile caps</i>	<i>Kilogram</i>	<i>800</i>	<i>\$4.00</i>	<i>\$3,200.00</i>
<i>02.05.03</i>	<i>Ballast walls</i>	<i>Kilogram</i>	<i>400</i>	<i>\$4.00</i>	<i>\$1,600.00</i>
02.06	Concrete				
02.06.01	Cast-in-Place Concrete				
<i>02.06.01.01</i>	<i>Pile caps</i>	<i>Cubic Meter</i>	<i>4</i>	<i>\$800.00</i>	<i>\$3,200.00</i>
02.06.02	Precast Concrete				
<i>02.06.02.01</i>	<i>Ballast walls</i>	<i>Cubic Meter</i>	<i>2</i>	<i>\$800.00</i>	<i>\$1,600.00</i>
<i>02.06.02.02</i>	<i>Shipping and Erection</i>	<i>Each</i>	<i>4</i>	<i>\$200.00</i>	<i>\$800.00</i>
02.07	Steel				
02.07.01	Structural Steel				
<i>02.07.01.01</i>	<i>Supply and Fabrication</i>	<i>Tonne</i>	<i>165</i>	<i>\$ 2,500.00</i>	<i>\$412,500.00</i>
<i>02.07.01.02</i>	<i>Shipping and Erection</i>	<i>Tonne</i>	<i>165</i>	<i>\$800.00</i>	<i>\$132,000.00</i>

Item#	Description of Work	Unit of Measure	Approx. Quantity	Unit Price	Extended Amount
02.09	Miscellaneous Metalwork				
02.09.01	<i>Supply and Install Guard Railings</i>	<i>Meter</i>	<i>350</i>	<i>\$140.00</i>	<i>\$49,000.00</i>
02.10	Structural Bearings and Anchor bolts				
02.10.01	Supply and Install(Includes Testing)	<i>L.S.</i>	<i>1</i>	<i>\$5,000.00</i>	<i>\$5,000.00</i>
02.12	Timber Decking				
02.12.01	Supply & Install	<i>Meter</i>	<i>1580</i>	<i>\$50.00</i>	<i>\$79,000.00</i>
Part A	TENDER COST ESTIMATE				\$933,000.00
	Detailed Engineering				\$50,000.00
	Geotechnical Drilling				\$65,000.00
	Tender and Contract Management				\$85,000.00
	Contingencies (30%)	<i>L.S.</i>			\$ 340,000.00
901.00	TOTAL TENDER, SITE OCCUPANCY (if applicable) AND ASSOCIATED COST ESTIMATES				\$1,473,000.00

Project Name: MODERN COLLIERY TRAIL BRIDGES - SUSPENSION BRIDGE OPTION

BRIDGE ORDER OF MAGNITUDE COST ESTIMATE					
Item#	Description of Work	Unit of Measure	Approx. Quantity	Unit Price	Extended Amount
02.	SECTION 2 - BRIDGE				
02.01	Mobilization	<i>L.S.</i>	<i>1</i>	<i>\$100,000.00</i>	<i>\$100,000.00</i>
02.02	Foundation Excavation				
<i>02.02.01</i>		<i>L.S.</i>	<i>1</i>	<i>\$16,000.00</i>	<i>\$16,000.00</i>
02.03	Steel Pipe Piling				
<i>02.03.01</i>	<i>Mobilization</i>	<i>L.S.</i>	<i>1</i>	<i>\$50,000.00</i>	<i>\$50,000.00</i>
<i>02.03.02</i>	<i>Material Supply</i>	<i>Metre</i>	<i>240</i>	<i>\$75.00</i>	<i>\$18,000.00</i>
<i>02.03.03</i>	<i>Driving</i>	<i>Metre</i>	<i>216</i>	<i>\$400.00</i>	<i>\$86,400.00</i>
<i>02.03.04</i>	<i>Socketing</i>	<i>Metre</i>	<i>24</i>	<i>\$1,500.00</i>	<i>\$36,000.00</i>
02.04	Reinforcing Steel				
<i>02.04.01</i>	<i>Uncoated - Pile caps</i>	<i>Kilogram</i>	<i>4000</i>	<i>\$4.00</i>	<i>\$16,000.00</i>
02.05	Concrete				
02.05.01	Cast-in-Place Concrete				
<i>02.05.01.01</i>	<i>Pile caps</i>	<i>Cubic Meter</i>	<i>20</i>	<i>\$1,000.00</i>	<i>\$20,000.00</i>
02.06	Cable				
<i>02.06.01</i>	<i>Supply and Installation (50.8mm diameter)</i>	<i>Meter</i>	<i>520</i>	<i>\$ 100.00</i>	<i>\$52,000.00</i>
<i>02.06.02</i>	<i>Supply and Installation(12mm diameter)</i>	<i>Meter</i>	<i>1780</i>	<i>\$ 10.00</i>	<i>\$17,800.00</i>
02.07	Steel				
02.07.01	Structural Steel				
<i>02.07.01.01</i>	<i>Supply and Fabrication</i>	<i>Tonne</i>	<i>16</i>	<i>\$ 2,500.00</i>	<i>\$40,000.00</i>
<i>02.07.01.02</i>	<i>Shipping and Erection</i>	<i>Tonne</i>	<i>16</i>	<i>\$800.00</i>	<i>\$12,800.00</i>
02.08	Hanger and Sway cable connections				
<i>02.08.01</i>	<i>Supply and Installation</i>	<i>L.S.</i>	<i>1</i>	<i>\$100,000.00</i>	<i>\$100,000.00</i>
02.09	Guard				
<i>02.09.01</i>	<i>Supply and Installation of handrail cable</i>	<i>Meter</i>	<i>350</i>	<i>\$20.00</i>	<i>\$7,000.00</i>

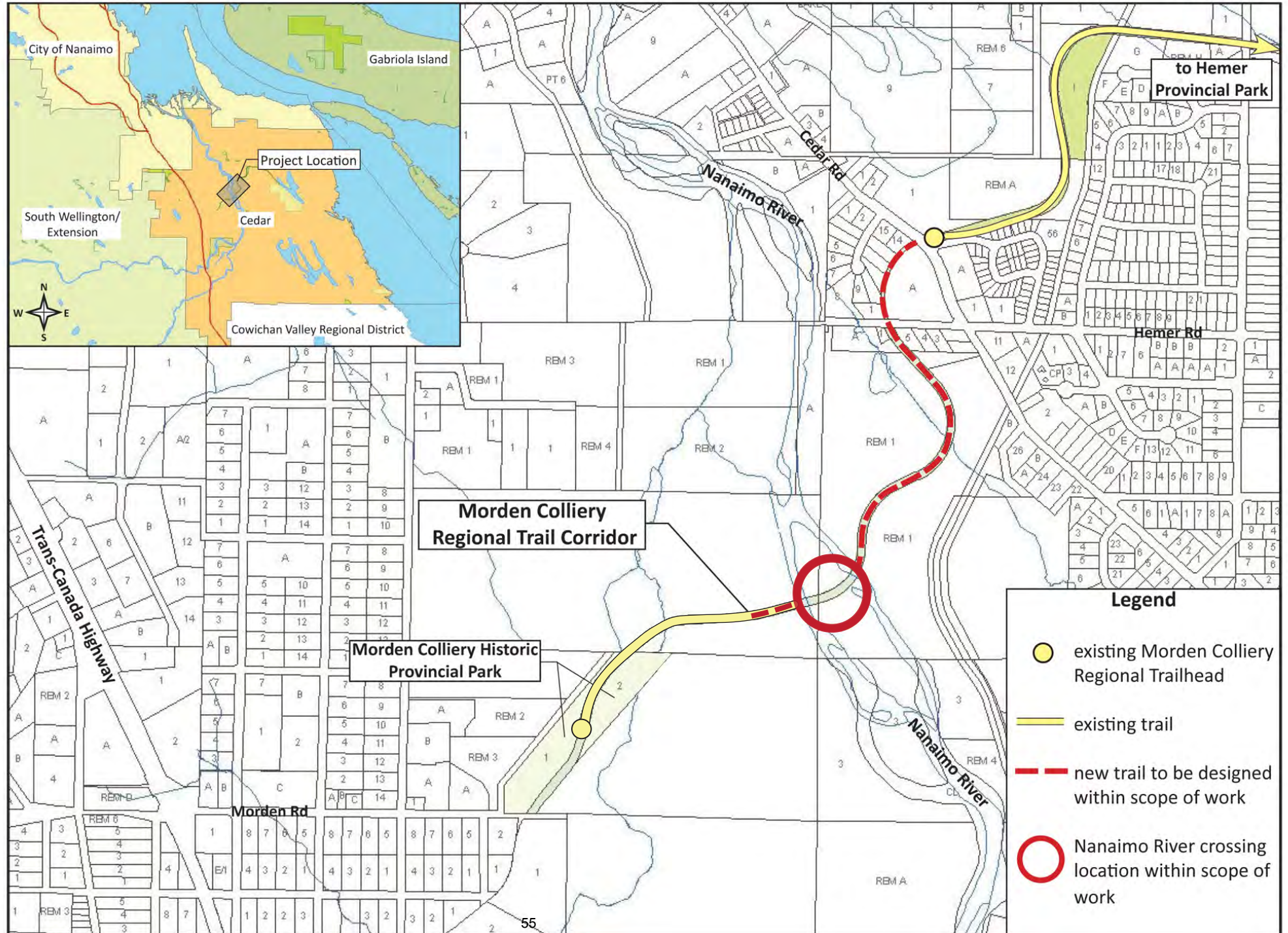
Item#	Description of Work	Unit of Measure	Approx. Quantity	Unit Price	Extended Amount
	<i>Fencing</i>	<i>Square Meter</i>	<i>425</i>	<i>\$50.00</i>	<i>\$21,250.00</i>
02.10	Timber Decking				
02.10.01	Supply & Install	<i>Meter</i>	<i>1575</i>	<i>\$50.00</i>	<i>\$78,750.00</i>
Part A	TENDER COST ESTIMATE				\$672,000.00
	Detailed Engineering				\$50,000.00
	Geotechnical Drilling				\$65,000.00
	Tender and Contract Management				\$85,000.00
	Contingencies (30%)	<i>L.S.</i>			\$ 265,000.00
901.00	TOTAL TENDER, SITE OCCUPANCY (if applicable) AND ASSOCIATED COST ESTIMATES				\$1,137,000.00

APPENDIX D – Satellite Images and Project Location

Morden Colliery Regional Trail: Nanaimo River Crossing and Trail Extension

Project Location

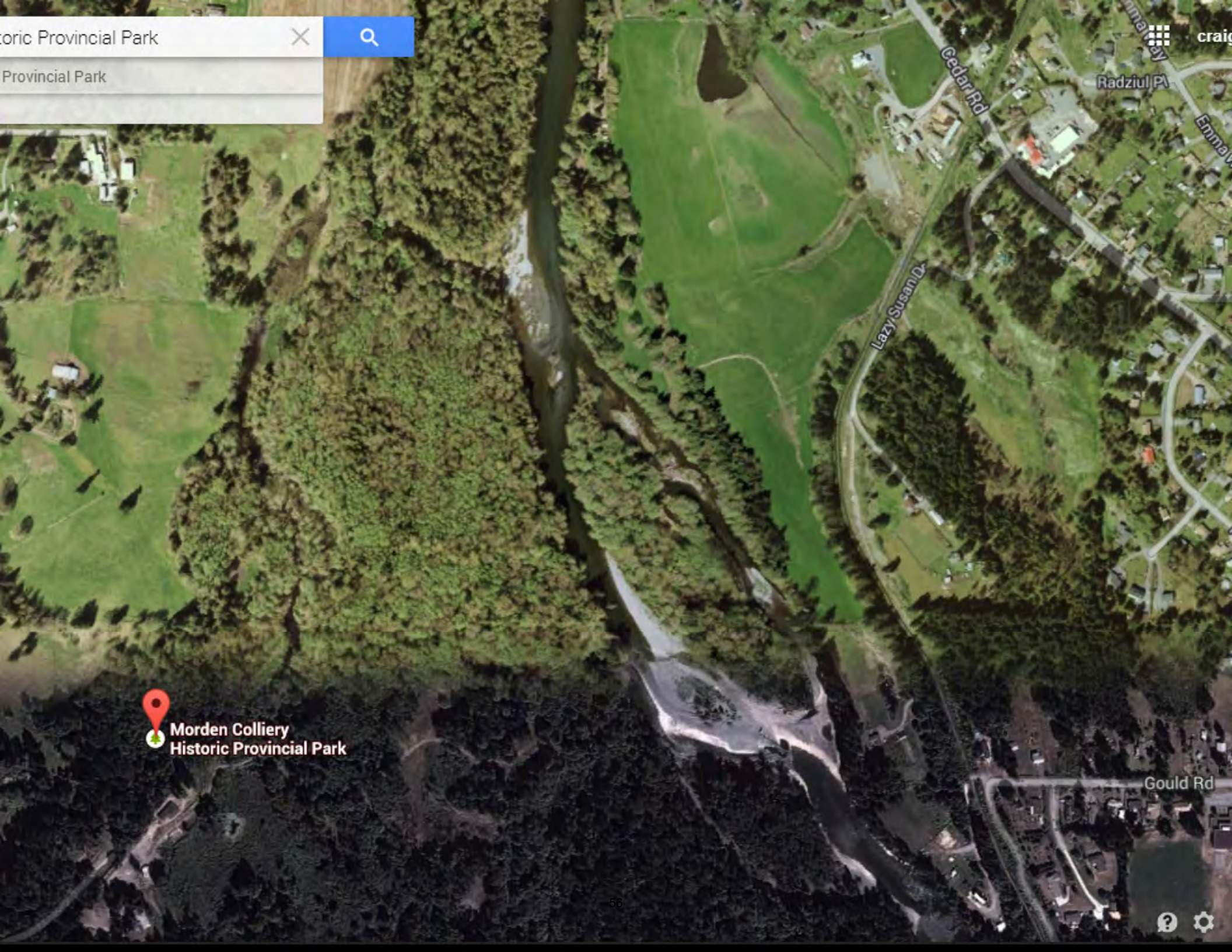
February 2014



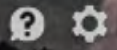
Historic Provincial Park



Provincial Park



Morden Colliery
Historic Provincial Park



APPENDIX E – Hydro-technical Report

MEMORANDUM

TO:	Craig Work (Herold)	DATE:	Jun 25, 2014
FROM:	Dave McLean(NHC)	NO. PAGES:	9 + enclosures
CC:		PROJECT NO.:	300380
		REF. NO.:	
RE:	Morden Trail Pedestrian Bridge Crossing Preliminary Hydrotechnical Assessment		

1 PURPOSE

Northwest Hydraulic Consultants Limited (NHC) was retained by Herold Engineering Limited (Herold) to provide hydrotechnical engineering input for the Morden Trail Bridge Crossing over the Nanaimo River, near Nanaimo BC. As part of the bridge feasibility and design process, hydrotechnical input is required to assess key components which include the channel reach stability, localised bank stability and scour risk, construction levels above the design flood, as well as to provide input to the bridge design (e.g. abutment locations, flood proofing). The proposed crossing, which is located on an island, significantly increases the complexity of the hydrotechnical engineering requirements. Issues include a longer bridge, increased protection works to maintain flows in two separate channels, and stability concerns at the island that are difficult to predict.

This memo summarises results of a hydrotechnical overview of the proposed Morden Trail pedestrian bridge crossing on the Nanaimo River. The analysis includes a brief assessment of the flood hydrology and river processes that could affect the stability of the channel near the crossing. Preliminary hydraulic parameters are provided for planning purposes.

2 WORK CARRIED OUT

The following work was carried out for this study:

- A site inspection of the Nanaimo River was conducted by NHC (D. McLean and G. Hill) accompanied by Steve Stacey (Lewkowich Engineering Associates Ltd.) and Craig Work (Herold).
- Preliminary design sketches of the proposed pedestrian bridge were reviewed (Herold Dwg. SK-1: Morden Colliery Trail and Bridges, Option 1 and Option 2).
- Discharges from Water Survey of Canada gauge 08HB034 “Nanaimo River near Cassidy” were compiled and a flood frequency analysis was carried out on the historic record of maximum instantaneous discharges for the period 1965 to 2013.
- Floodplain maps of the Nanaimo River published by the BC Ministry of Environment, Water Management Branch, in May 1984 were reviewed. The Ministry’s HEC-RAS model was

downloaded from the web site and was re-compiled in order to estimate hydraulic conditions near the site.

- Historical air photos from 1968 and 1982 were reviewed and compared to recent imagery available from Google Earth in order to assess channel changes near the crossing site.
- Hydraulic computations were made to estimate representative scour levels at the crossing.
- The assessment was summarised in this letter report.

3 PROPOSED CROSSING

Figure 1 shows the approximate alignment of the proposed pedestrian crossing. The trail will be constructed at grade and will not confine the river flow during overbank flooding. The river crossing is situated across a wooded island in the Nanaimo River. The preliminary design concepts provided by Herold are attached in Appendix A. Two bridge crossings are required: Bridge 1 across the main channel (west side of island) has a span of 90 m, and Bridge 2 across the side channel (east side of island) has a span of 84 m. Option 1 uses clear span truss bridges. Option 2 uses suspension bridges with their supporting towers set back from the channel on the floodplain.

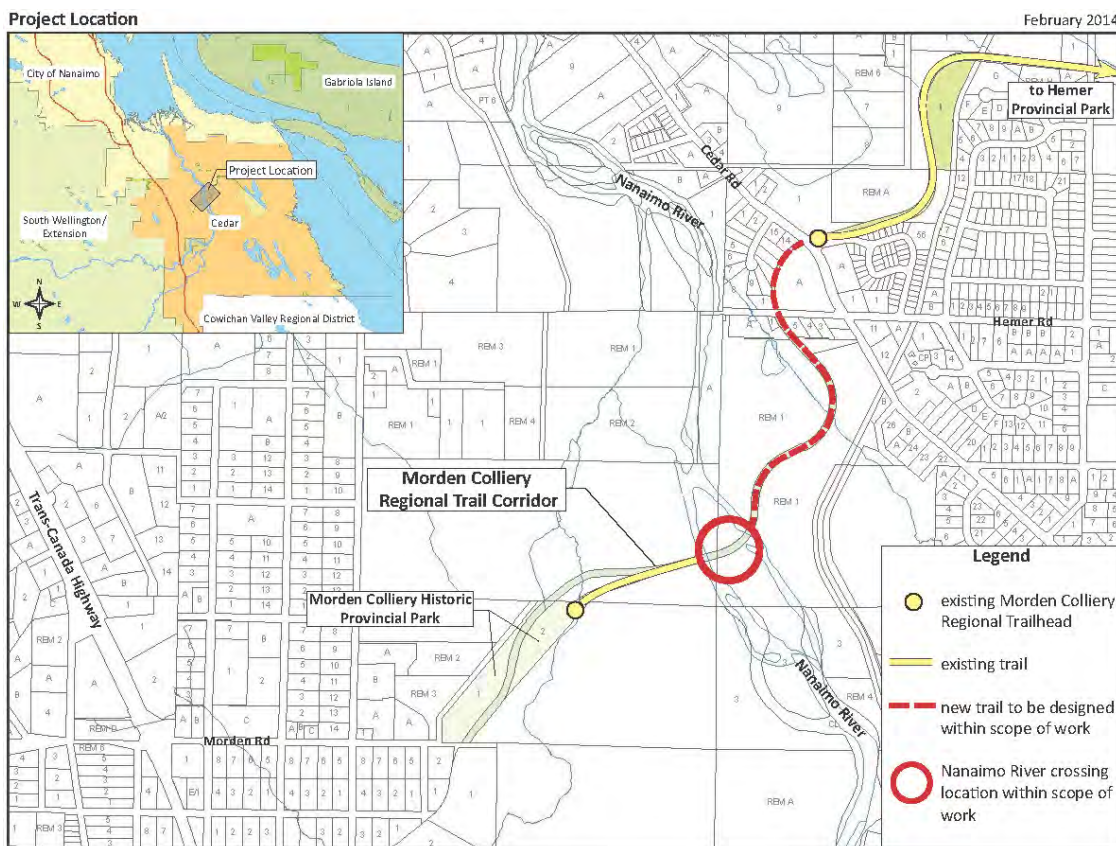


Figure 1: Morden Colliery Regional Trail – Nanaimo River Crossing and Trail Extension

4 RIVER CHARACTERISTICS

4.1 FLOOD HYDROLOGY

Historic flood discharge records are available at three hydrometric stations operated by Water Survey of Canada (WSC). Table 1 summarises the drainage areas and period of the station records.

Table 1: Hydrometric records near crossing

Station	Station Name	Drainage Area (km ²)	Period of Record	Number of Years of Instantaneous Maximum Discharges
08HB005	Nanaimo River near Extension	645	1913-1963	7
08HB034	Nanaimo River near Cassidy	676	1965-2013	49
08HB003	Haslam Creek near Cassidy	96	1950-1998	5

The two gauges on the Nanaimo River are both located upstream of Highway 1. The gauge near Extension (08HB005) had a relatively long period of daily measurements but had only seven years of instantaneous maximum discharges. The gauge near Cassidy (08HB034) has operated since 1965 and has 49 years of instantaneous maximum discharge values. Since the drainage areas of the two gauges are very similar, the records from the two gauges were combined. The highest recorded instantaneous flow occurred on January 15, 1961, reaching 1550 m³/s. Another extreme flood occurred on October 29, 1921, reaching approximately 1160 m³/s⁽¹⁾. Other significant floods occurred on December 27, 1980 (958 m³/s), November 23, 1990 (951 m³/s) and December 4, 2007 (884 m³/s). All of these discharges are maximum instantaneous values.

Haslam Creek drains 96 km² of woodland and enters the Nanaimo River approximately 2 km upstream of the crossing. The discharge intensity of the stream appears to be relatively low compared to the Nanaimo River. For example, the flood of January 1961 reached 63 m³/s which corresponds to a unit runoff intensity of 0.66 m³/s per km². The unit runoff intensity for the same event on the Nanaimo River reached 2.4 m³/s per km².

In order to estimate peak flows on the Nanaimo River at the bridge crossing the published discharges from gauge 08HB034 were pro-rated by 10% to account for local inflows.

Figure 2 shows a flood frequency plot of annual maximum instantaneous discharges on the Nanaimo River. Table 2 summarises some discharge statistics at the gauge and at the crossing site. The values are slightly lower than original flood estimates produced by the BC Ministry of Environment (MoE) in 1984, primarily due to the additional 30 years of records that are now available for the analysis.

⁽¹⁾ Reported as a “daily discharge”; the actual instantaneous maximum discharge could have been substantially larger.

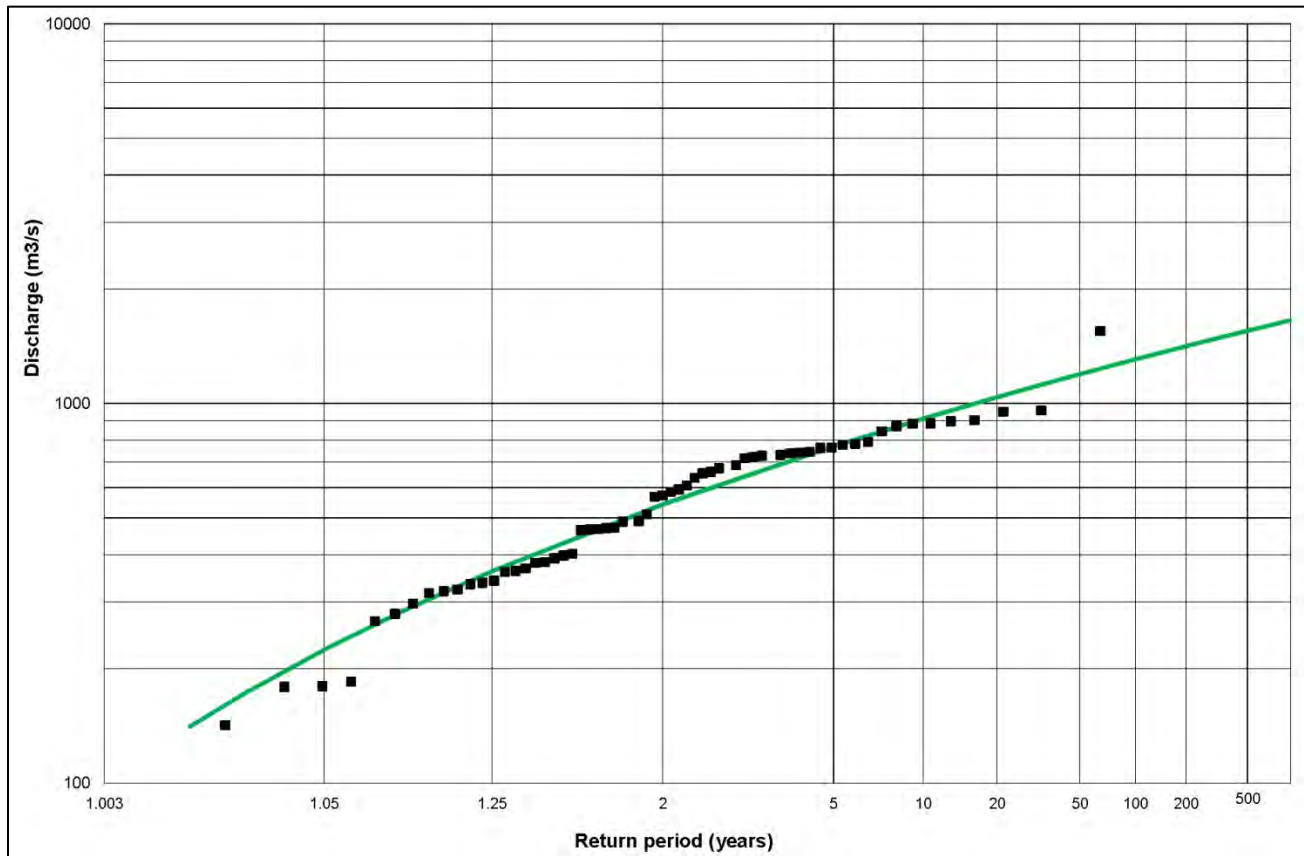


Figure 2: Frequency analysis, Nanaimo River near Cassidy

Table 2: Flood frequency estimates, Nanaimo River near Cassidy

Return Period (Years)	Annual Exceedence Probability (%)	Discharge at Gauge (m ³ /s)	Discharge at Crossing (m ³ /s)
2-year	50	560	620
5-year	20	780	860
20-year	5	1060	1170
100-year	1	1330	1460
200-year	0.5	1440	1580

The flood frequency analysis indicates the 2007 flood had a return period of approximately 10 years while the floods in 1990 and 1980 had return periods of just under 20 years. These results also show that there has not been an extreme flood on the Nanaimo River for over 50 years.

4.2 RIVER LEVELS

Figure 3 shows the water level hydrograph of the Nanaimo River near Cassidy (WSC gauge 08HB034) for the period April 1, 2013 to March 31, 2014. The levels are referenced to a local datum, not geodetic. The lowest water level occurs in July-August. The design sketches in Appendix A show the water level at the crossing was about 5.9 m in early April 2014. Based on the gauge information, it is expected low water at the crossing in August could be about 1 m lower than at the time of the survey.

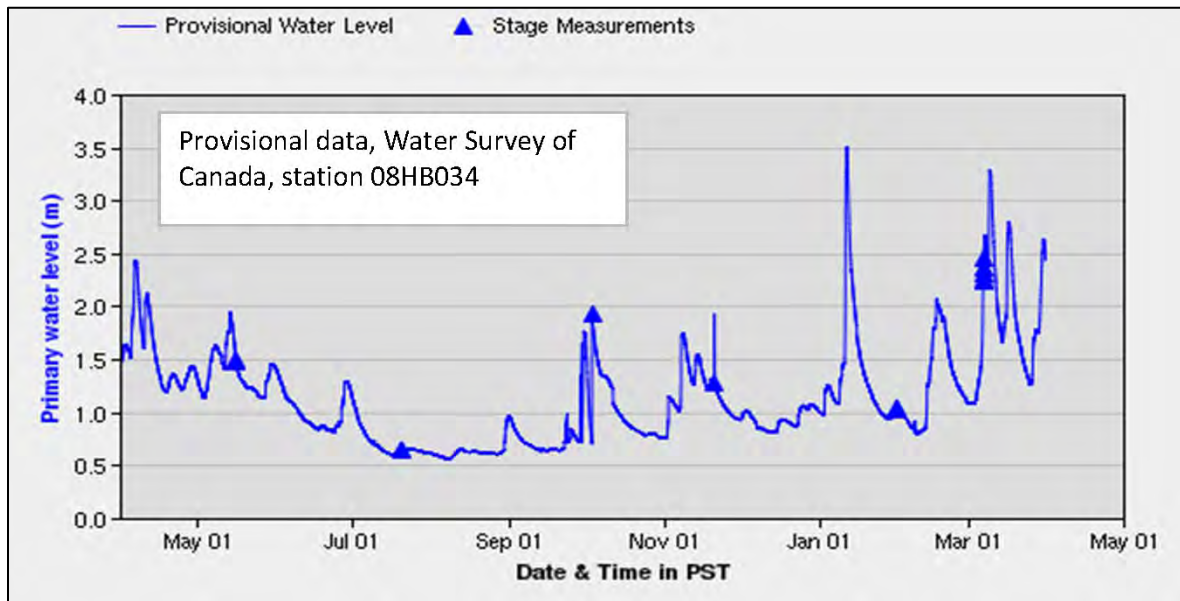


Figure 3: Water level hydrograph, Nanaimo River near Cassidy: April 1, 2013 to March 31, 2014

High water can typically occur at anytime between October and March. Floodplain maps produced by the BC Ministry of Environment show 1 m contours of the flood construction level (FCL) on the Nanaimo River. The FCL represents the 200-year flood level plus a freeboard allowance of 0.3 m based on the information provided by MoE. The estimated 200-year and 20-year flood levels (without freeboard) are approximately 10.7 m and 9.9 m just upstream of the site. Given that the model was developed from river surveys in the early 1980s, the reliability of these levels under the present conditions is questionable. Additional surveys and re-calibration of the hydraulic model would be required to produce more updated results.

4.3 RIVER MORPHOLOGY

The proposed bridge crossing is situated about 4.7 km upstream of the Nanaimo estuary tidal flats and is outside the zone of direct tidal influence during high flood stage. The Nanaimo River flows in a mainly single, meandering, gravel-bed channel and occasionally divides or splits around vegetated islands. The overall pattern has an irregular “wandering” appearance. The bed material consists of gravel and sand, with exposed bar sediments having a median grain size of about 50 mm. The river occasionally deflects off bedrock valley walls and flows over bedrock both upstream and downstream of the crossing.

Representative bankfull channel characteristics near the crossing are as follows:

- Top width: 75 m
- Mean depth: 3.5 m
- Slope: 0.0015 (1.5 m per kilometre)

Near the crossing, the river splits into two channels. The top width (measured perpendicular to the flow) is 65 m on the west channel (Bridge 1) and 35 m on the east channel (Bridge 2). Based on the information from BC MoE's floodplain mapping, bankfull conditions correspond to relatively frequently occurring floods (return period of 2 to 5 years).

Figure 4 shows the channel alignment in 1968, 1982 and 2010. The overall channel pattern has remained reasonably stable near the crossing over the last 45 years. There are two prominent islands near the site. The main flow of the river has remained on the east side of the upstream island (Island 1 on Figure 4). However, it appears the west side channel has gradually filled in over time. The bridge crossing is situated on Island 2. The flow appeared to be split evenly between the east and west channels in 1968. However, since then the main flow has been concentrated on the western side channel. A large gravel bar has grown near the head of Island 2 (labelled "A" on 2010 image in Figure 4). The bar partially blocks the entrance to the eastern side channel. The bar also deflects the flow in the main (west) side channel towards the west bank. Continued accretion of the bar could induce bank erosion on both sides of the main (western) channel. This will promote bank erosion near both ends of Bridge 1.

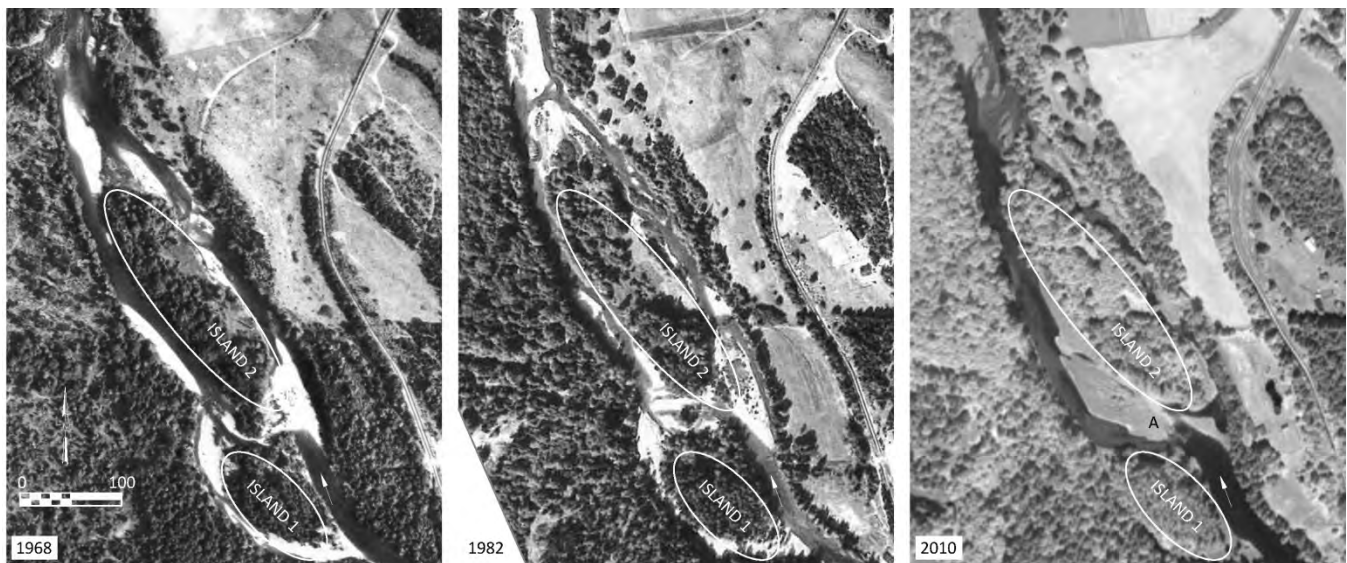


Figure 4: Channel changes near crossing, 1968 to 2010

If the gravel bar and large woody debris (LWD) accumulates on the bar, over the long term this could force flow back into the eastern side channel, which would promote bank erosion at Bridge 2.

4.4 RIVER HYDRAULICS AND SCOUR

The geometry data from the BC MoE HEC-2 model was downloaded from their web site and was re-compiled into HEC-RAS format so that preliminary hydraulic calculations could be performed for a range of discharge conditions. The limitations of this model were described in Section 4.2. The model shows that during extreme floods a significant portion of the flow (15 to 25%) is conveyed on the floodplain. The mean channel velocity in the channel reaches up to 3.8 m/s; local maximum depth-averaged velocities will be substantially higher.

Based on the historic cross sections, the lowest bed elevation near the crossing was 3.7 m (near the downstream end of Island 2). The corresponding flow depth was 6.6 m (referenced to the 200-year flood stage). Preliminary estimates of potential scour levels were made using Blench's equation (in metric units):

$$Y_s = 1.5 Z \left(\frac{q^2}{F_b} \right)^{1/3}$$

where Z is an empirical scour factor (ratio of maximum/mean depth), q is the discharge intensity per unit width (Q/W) and F_b is the bed factor, which depends on the bed sediment size and sediment transport rate.

At a 200-year discharge, representative values are as follows:

- $WL = 10.5$ m
- $q = 12.5$ m²/s
- $Z = 1.7$
- $F_b = 3.7$

The 200-year maximum scour depth at the crossing (Y_s) is 8.8 m and the corresponding minimum scoured bed elevation is 1.7 m (geodetic). The estimate for the 20-year scour level is very similar to the 200-year estimate. The estimated scoured bed elevation under a 2-year flood is 3.2 m geodetic, which is similar to the lowest level on the cross section near the downstream end of Island 2.

5 PRELIMINARY DESIGN PARAMETERS

BC Ministry of Transportation issued guidelines as a supplement to the Transportation Association of Canada's publication "Guide to Bridge Hydraulics" issued in 2002. The BC MoT guide recommends the design return period for bridges is generally 200 years, although they list 100 years for "low volume" structures. Given that the available hydraulic information on the Nanaimo River was produced in the 1980s and may not be representative of present conditions, we have used a return period of 200 years for this preliminary assessment.

The island at the crossing site consists of erodible floodplain deposits and will be subject to periodic bank erosion and channel scour. Over a design life of 30 to 50 years, the main channel may switch from one side of the river to the other and may temporarily abandon one of the side channels. Channel shifting and avulsions are likely to be partly controlled by log jam formation. Stabilizing the banks against future erosion would require

constructing riprap revetments around the base of the bridge towers. Short, localized protection generally is not very effective since short revetment sections are outflanked. One option would be to monitor the site on a regular basis and defer constructing or extending bank protection until erosion is posing a hazard to the crossing.

The foundation design of the towers should consider a future case where the river has eroded its banks and develops deep scour along the base of the structure. In this case, the towers should remain secure against undermining, although the river could still outflank the bridge openings.

For preliminary planning purposes, the following hydraulic design parameters are recommended:

- 200 year discharge = 1580 m³/s
- 200 year water level at crossing = 10.7 m geodetic (without freeboard)
- Minimum freeboard allowance = 1.5 m (to allow for passage of log jams and debris, BC MoT design standard)
- Low chord level (underside of bridge) = 12.2 m geodetic
- Minimum scoured bed elevation at bridge abutments = 1.7 m geodetic

6 CLOSURE

Additional hydrotechnical design services are recommended for the project. These include river surveys, a more thorough geomorphology investigation, detailed waterway design including flood level, scour, and erosion assessments, and review of the design.

If you have any questions, please do not hesitate to contact us at 250.754.6425.

Sincerely,

northwest hydraulic consultants ltd.

Prepared by:

Reviewed by:

Dave McLean, Ph.D., P.Eng.
Principal

Graham Hill, P.Eng
Associate

ENCLOSURES:

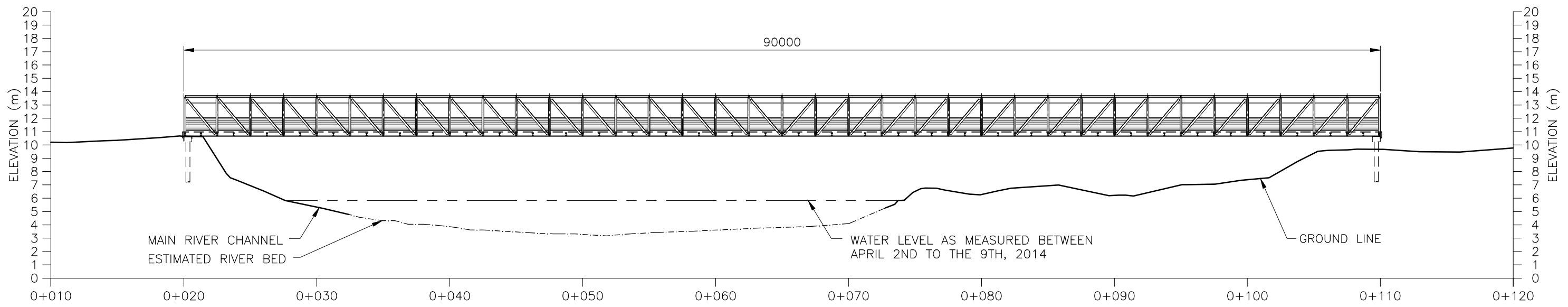
Appendix A: Herold Engineering Drawing No. SK1 – “Morden Colliery Trail and Bridges Concept Options”

DISCLAIMER

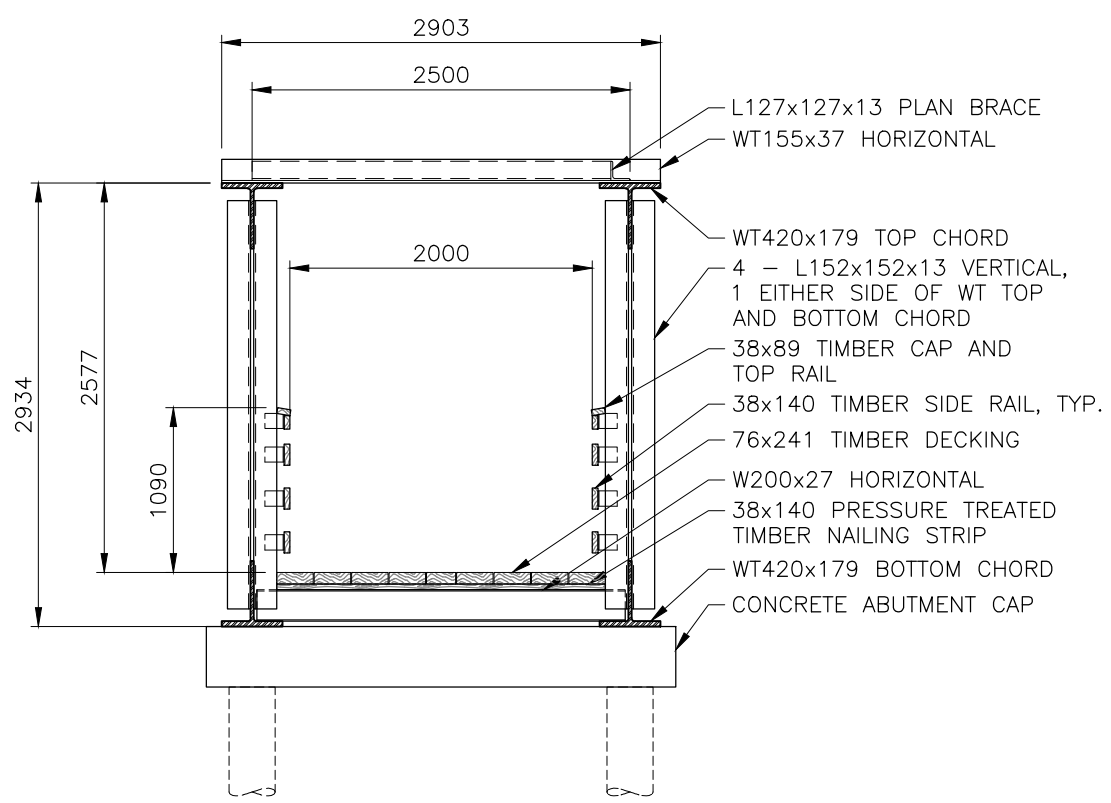
This document has been prepared by **Northwest Hydraulic Consultants Ltd.** in accordance with generally accepted engineering practices and is intended for the exclusive use and benefit of Herold Engineering Limited. and their authorized representatives for specific application to the Morden Trail Bridge Crossing on the Nanaimo River. The contents of this document are not to be relied upon or used, in whole or in part, by or for the benefit of others without specific written authorization from **Northwest Hydraulic Consultants Ltd.** No other warranty, expressed or implied, is made.

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File: H:\Projects\0837-029 Morden Colliery Trail And Bridges\04S Drawings\Active\Preliminary\0837-029 BRIDGE 1.dwg Plot Time: May, 12, 14 3:01 PM User: Peter Ungby
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ELEVATION - 90m BRIDGE 1
 1:300



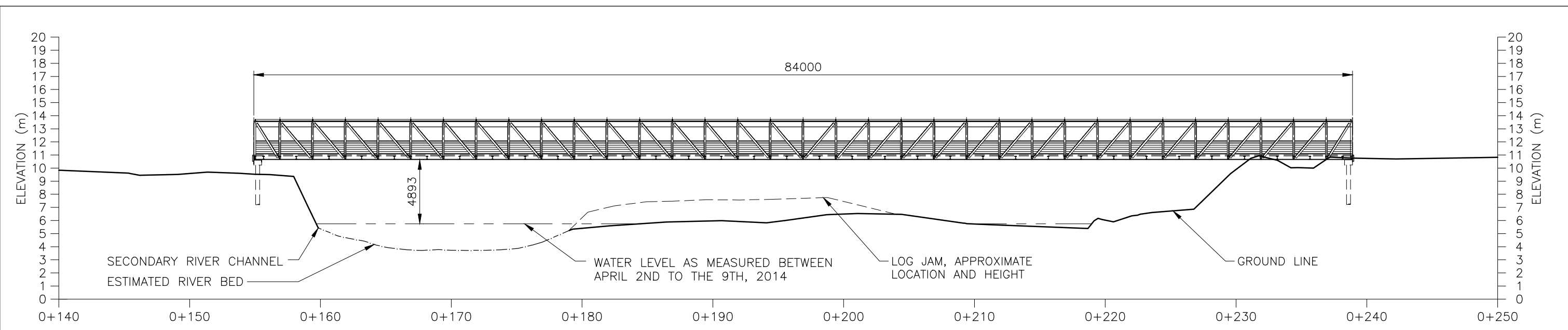
AT ENDS (BALLAST WALL NOT SHOWN FOR CLARITY)
TYPICAL SECTION
 1:50

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 NOT FOR
 CONSTRUCTION

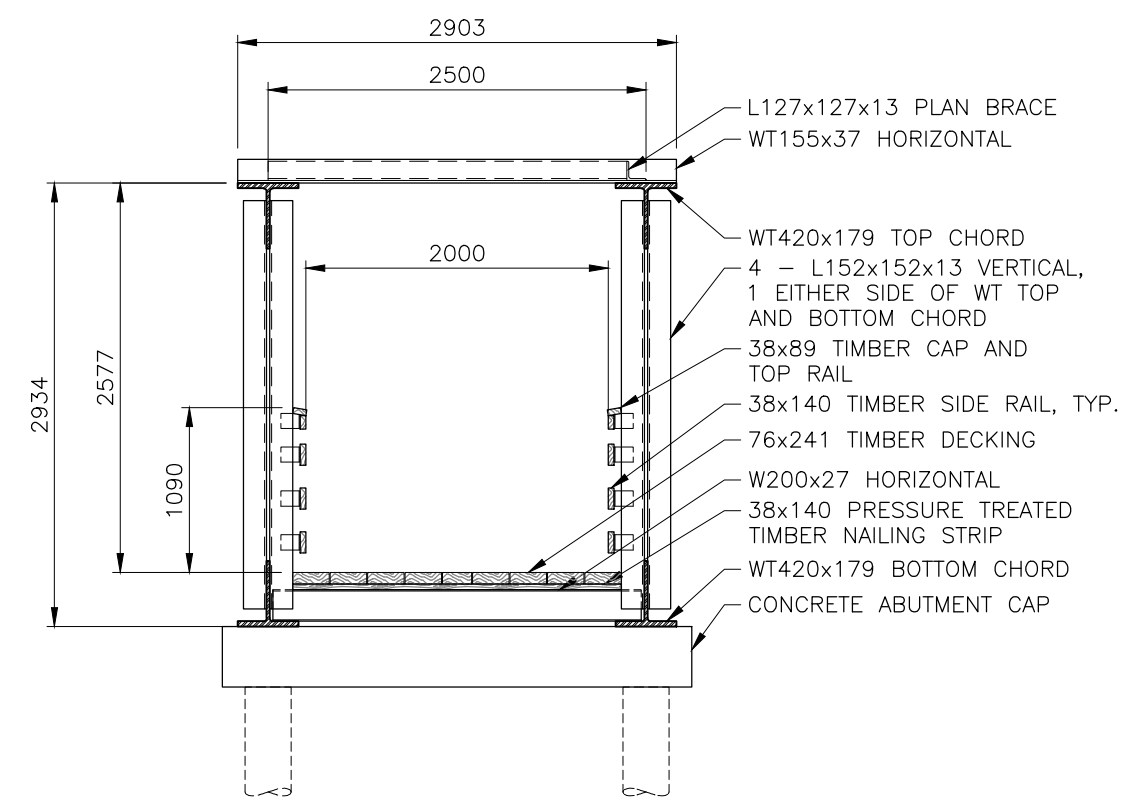
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A	2014.05.12	PRELIMINARY

 3701 Shenton Rd, Nanaimo, BC V9T 2H1 Tel: 250-751-8558 Fax: 250-751-8559 Email: mail@heroldengineering.com	MORDEN COLLIERY TRAIL AND BRIDGES CONCEPT OPTION 1 BRIDGE 1 90m SPAN	
	DRAFTED PHU	SCALE AS SHOWN
HEL DRAWING No. SK1		REVISION A

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ELEVATION – 84m BRIDGE 2
 1:300



AT ENDS (BALLAST WALL NOT SHOWN FOR CLARITY)
TYPICAL SECTION
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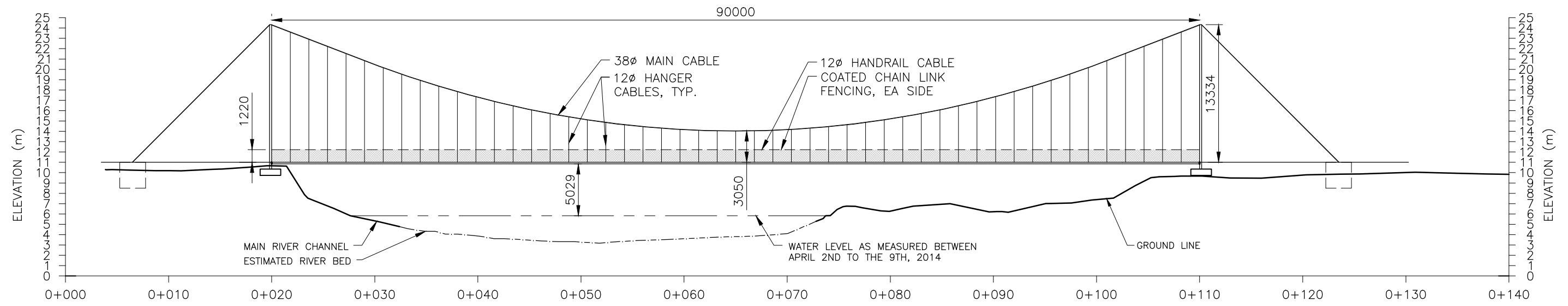
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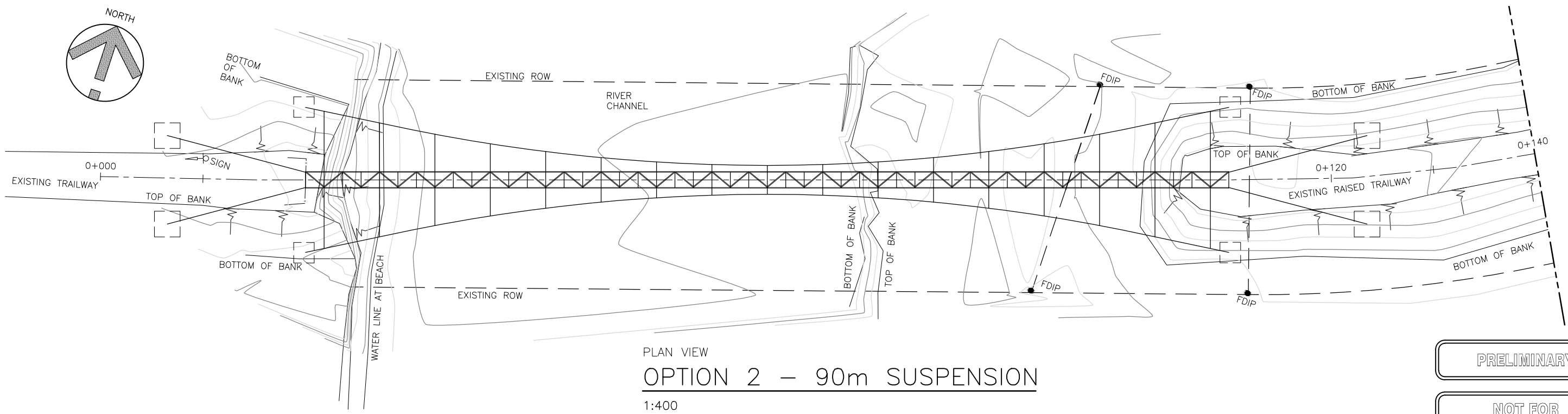
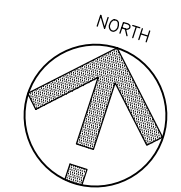
 3701 Shenton Rd, Nanaimo, BC V9T 2H1 Tel: 250-751-8558 Fax: 250-751-8559 Email: mail@heroldengineering.com	MORDEN COLLIERY TRAIL AND BRIDGES CONCEPT OPTION 1 BRIDGE 2 84m SPAN	
	DRAFTED PHU	SCALE AS SHOWN
HEL DRAWING No. SK2		REVISION A

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TABLOID 11" x 17"



ELEVATION
OPTION 2 – 90m SUSPENSION
 1:400



PLAN VIEW
OPTION 2 – 90m SUSPENSION
 1:400

PRELIMINARY

NOT FOR CONSTRUCTION

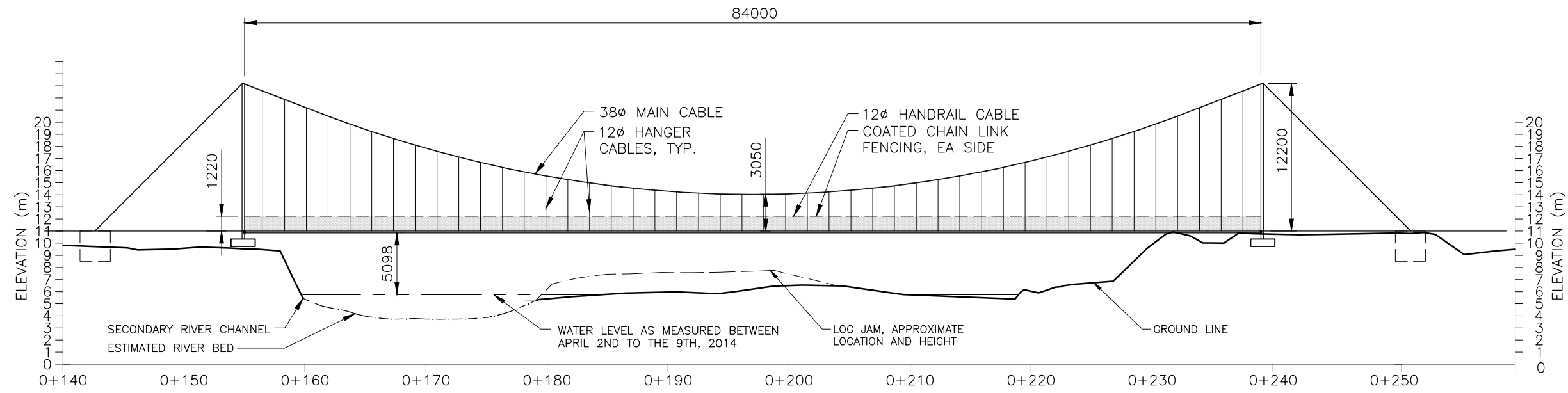
ISSUES		
No.	DATE	ISSUED FOR
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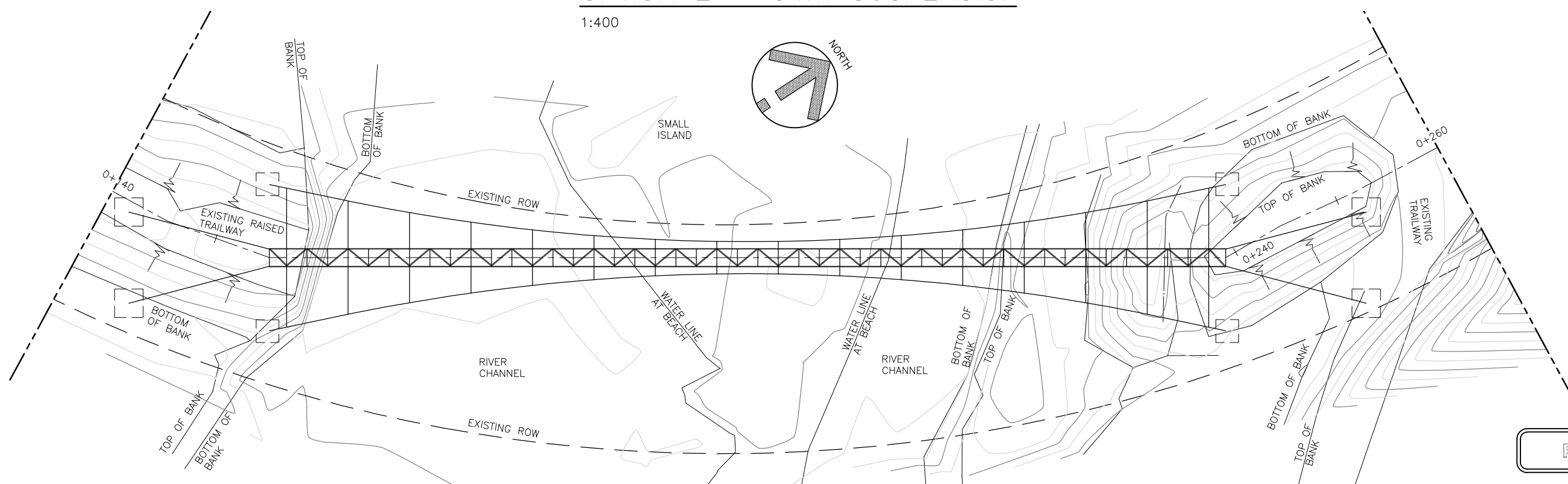
MORDEN COLLIERY TRAIL AND BRIDGES
CONCEPT OPTION 2
BRIDGE 1 90m SPAN

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ELEVATION
OPTION 2 – 84m SUSPENSION
 1:400



PLAN VIEW
OPTION 2 – 84m SUSPENSION
 1:400

PRELIMINARY

NOT FOR CONSTRUCTION

ISSUES		
No.	DATE	ISSUED FOR
A	2014.05.12	PRELIMINARY

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 Email: mail@heroldengineering.com

**MORDEN COLLIERY
 TRAIL AND BRIDGES
 CONCEPT OPTION 2
 BRIDGE 2 84m SPAN**

DRAFTED PHU	SCALE AS SHOWN	PROJECT No. 0837-029	HEL DRAWING No. SK4	REVISION A
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Area A PRCC Planning Meeting Notes

Saturday, November 1st 2014

Attendees: B. White, A. Vincent, P. Grand, J. Fiddick, A. Thornton, A. McPherson, D. Banman, H. King

Round table check-in- 'Why did you join the PRCC?' The group shared the following:

- Trails
- Preservation of historic sites
- Improved public access to lakes/rivers/beaches
- Culture- the need to provide a greater focus and support of it in the community
- An opportunity to share professional background/experience expertise with community
- Support the provision of recreational sports
- Interest in politics
- Support provision of services for seniors
- Strengthen ties between Cassidy/S. Wellington/Cedar

History Reviewed

- Staff and Chairman McPherson reviewed the Commission's history surrounding the recreation programmer position. The decision was made to withdraw the position was financially based
- The wages and benefits for the Recreation Programmer (full time) was \$73,165.00
- The Commission was provided with a timeline at the last regular commission meeting
- There has been some loss of momentum since the discontinuation of the programmer position but the time is right now to discuss programming again.
- There was some discussion around how the amount of funds transferred to the City of Nanaimo is calculated for the provision of recreation services to support the use of those services/facilities by Area A residents. There are some concerns around how the percentage of use is calculated by the contractors that conduct the assessment.
- Director McPherson has been attending the Regional Parks and Trails meetings to get a better understanding of the distribution of funds and influence decisions where possible
- The potential development of the Morden Mine Tipple site and the Morden Trail way bridge will have a positive impact within the area not only as a recreational/parks asset but also as a economic driver i.e. bike/hike/horse trail network and the resulting tourism

Areas of focus the Commission Members would like to address- *no time line established or order of priority but the following were the topics of discussion for the balance of the session*

- School closures will and have had an impact within the community. What opportunities are there for PRCC to help fill needs within the community
 - Use of space
 - Use of equipment

- Provision of community recreation services through partnership with SD 69 i.e. co funding Community School Coordinators
- Alternative delivery systems for the provision of recreation services in other Electoral Areas i.e. Gabriola, Area F (ACRA)
 - Commission members expressed an interest in having representatives from those groups attend future Commission meeting to discuss the pros/cons of the systems
 - www.gabriolarecreation.org
 - The question was asked- how do we start a non-profit society and is that necessary?
- Creation of an inventory of recreation facilities in Area A
 - This is a task that can be taken on by a subcommittee of the Commission or can be hired out to a local group if interest is expressed. No direction was given on action to be taken at this point.
 - The facility inventory would be created with the goal of sharing it with the community to promote the use of local facilities and highlight opportunities for existing and future potential recreational/cultural activities.
 - Would also help to identify/confirm the need for a new facility. There was some discussion that what is needed first is to strengthen the delivery of recreation services not necessarily through the reestablishment of a programmer but perhaps by way of better coordination between existing local community groups currently providing recreation/cultural opportunities
 - The issue of program location changes was raised as a common concern that has been identified and was mentioned as perhaps one reason Area A residents go into Nanaimo for programs- less room changes/confusion as there is dedicated program space
 - The idea of making better use of the South Wellington Hall was discussed Gary Hyne (sp) is the contact for booking/use of that facility. Again having an inventory available to community would aid in the communication and expansion of cultural and recreation programs offerings
 - Community Works Funds now available and can be used for the development/major renovation of facilities so that does make this option more attractive- but need to remain cognizant to the fact you need to then be able to program and maintain those spaces
 - Maybe it's programming the existing space not bringing on more space at this point that should be the focus?
- Communication between the PRCC and the community is a challenge currently- how do we let people know what we are doing
 - Staff shared that the ACRA group has created and maintains a community calendar of events. The challenge is keeping it current so it remains relevant
 - <http://arrowsmithcalendar.com/>

- This is another topic that members of ACRA could speak to at a future presentation to Commission
 - Are community kiosks the answer? Where are they to be located? Park of parks planning?
 - Could we tap into existing facilities and ask to have dedicated bulletin board for PRCC notices? Fire hall for example.
 - Need to improve communication of the availability of the Grants in Aid funding. Staff will create an information sheet for Commission members to distribute. The application form and criteria are available on www.rdn.bc.ca/recreation for quick referrals
 - Leverage the association the Commission has with RDN- for communication purposes at least- are we making the best use of the resources available?
- Director McPherson shared with the group the opportunity to direct some Community Works funds (or was it Gas Tax Funds?) towards a partnership with SFN for a major renovation/enhancement of the lacrosse box (sport court) on Reserve no. 2
 - The opportunity for partnership is clear between SFN, Area A and local sport group
 - Partners will all contribute to the facility development- labour and funds
 - Will be bringing forth resolution to Commission members to establish official support for this use of funds

Tasks:

- Staff to arrange meeting with SD69 staff to discuss
 - Potential partnership in support of Community School Coordinator position
 - Further exploration of use of facility space within close school facilities
 - Use of equipment at closed schools- Can it be used by the community?
 - What are their plans for the maintenance/upkeep of school grounds
- Staff to create one page flyer within information about Grants in Aid and provide copies to PRCC commission members
- Distribute inventory list of programming equipment and office supplies owned by Area A PRCC to commission members (see attached Excel document)
- Invite members of Arrowsmith Community Recreation Association (Area F) and Gabriola Recreation Society to a future PRCC meeting to share their experience providing recreation services and the

RDN ELECTORAL AREA A RECREATION EQUIPMENT INVENTORY

Updated April 11, 2013

Oceanside Place storage:

RDN Recreation equipment is in Upper Meeker Storage Room, in back right corner under heater.

Number:	Description:	Location:
3 doz (approx)	RDN labelled bean bags (multi-coloured, vinyl/leather covered)	Meeker
1	preschool monster toss game	Meeker
1	Foam Hop scotch	Meeker
1	plastic bowling set	Meeker
9	tot soccer balls size 3	Meeker
1	preschool parachute	Meeker
1	ghetto blaster	Meeker
12	preschool foam red catch balls, 1 easy catch ball (multicoloured)	Meeker
1	bin arts and crafts supplies (consumable)	Meeker
1	hose	Meeker
3	blue 1/2 bins	Meeker
6	colour set spud jumpers (potato sack jumpers)	Meeker
1	red playground ball (10in)	Meeker
2	Hop balls (blue)	Meeker
1	paper shredder	Meeker

Ann-Marie is using this in main R & P admin office (2012) as approved by Dean

Note: there is nothing at Budget storage in Parksville

Note: 3 First Aid Kits were amalgamated into NRS First Aid supplies

Cedar Heritage Centre storage:

RDN Equipment is stored in basement (entrance under back wheelchair accessible ramp).

Number:	Description:	Location:
2	tents (stand alone canopies with bags)	CHC basement
2	external building RDN large signs (from Fire Hall office)	CHC basement

CSCES/Darlene is managing this equipment on behalf of RDN (letter in place)

Budget Storage by RDN Main Office (Matt O'Halloran monitors shared storage locker and has key)

RDN Office Equipment, signs, printer

Number:	Description:	Location:
2	RDN sandwich signs	Budget Storage - Nanaimo
1	corner desk	Budget Storage - Nanaimo
1	small 2 drawer filing cabinet	Budget Storage - Nanaimo
1	tall boy storage cabinet	Budget Storage - Nanaimo
1	tall bookcase (grey)	Budget Storage - Nanaimo
1	large bulletin board	Budget Storage - Nanaimo
1	printer/scanner/photocopier (desktop)	Budget Storage - Nanaimo

Note: Transit took the large photocopier from Cedar Heritage Centre.

1	computer (Programmer A)	RDN IT department
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Apr 11/13 Computer going to RAC for CFO position

RDN Facility and Sports Field 2010 Usage Study

PERC – Brian Johnston

November 9, 2010

Board Seminar

Introduction

Goal was to clarify where users of facilities and services lived with a high degree of accuracy

- Pools (Ravensong and Nanaimo Pools)
- Arenas (Oceanside and Nanaimo Rinks)
- Sports fields in Districts 68 and 69
- Oliver Woods Community Centre
- Northern Recreation Services

Methodology

The consultants measured the three types of facility use

Drop in activities – exit survey at three pool facilities

Programmed uses – review of registration databases for pools, arenas and Northern Recreation Services

Rental uses – survey of major user groups of fields, pools, and arenas

Survey Accuracy

The methodology is accurate to within 2.5% nineteen times out of 20, which is better than the industry standard in terms of survey level of confidence alone.

Nanaimo Pools

Figure Six
Proportion of Nanaimo Pool Uses from Each Jurisdiction

Category of Use	Area A	Area B	Area C	Area E	Area F	Area G	Area H	Nanaimo	Parksville	Qualicum Beach	Lantzville	Other	Total
User Survey	2	1	.5	2	0	0	0	36.5	.5	.5	1.5	5.5	50.0
Program Reg	1	0	1	0	0	0	0	34.6	0	0	2.0	1.2	39.8
Group Rental	.3	0	0	.2	0	0	0	8.2	.1	.1	.7	.4	10.0
Totals	3.3	1.0	1.5	2.2	0	0	0	79.3	.6	.6	4.2	7.1	99.8*

- numbers don't add to 100 due to rounding

Apportioning Nanaimo Pool Costs

Taking out the non participating jurisdictions means that:

- Electoral Area A taxpayers pay 3.7%
- Electoral Area B taxpayers pay 1.1%
- Electoral Area C taxpayers pay 1.7%
- City of Nanaimo taxpayers pay 88.8%
- District of Lantzville taxpayers pay 4.7%

Nanaimo Arenas

Figure Nine
Proportion of All Nanaimo Arena Uses from Each Jurisdiction

Category of Use	Area A	Area B	Area C	Area E	Area F	Area G	Area H	Nanaimo	Parksville	Qualicum Beach	Lantzville	Other	Total
Program Reg	.4	.2	.5	.1	0	0	0	7.9	0	0	.6	.3	10
Group Rental	5	0	4	0	1	1	0	70	1	1	4	3	90
Totals	5.4	.2	4.5	.1	1	1	0	77.9	1	1	4.6	3.3	100

Apportioning Nanaimo Arena Costs

Taking out the non participating jurisdictions means that:

- Electoral Area A taxpayers pay 5.8%
- Electoral Area B taxpayers pay .2%
- Electoral Area C taxpayers pay 4.9%
- City of Nanaimo taxpayers pay 84.1%
- District of Lantzville taxpayers pay 5.0%

Sportfield Use

Figure Fourteen
Summary of Percentage Breakdown of Field Usage

Location of Facilities	Area A	Area B	Area C	Area E	Area F	Area G	Area H	Nanaimo	Parksville	Qualicum Beach	Lantzville	Other	Total
District 68 Fields	3.26	.62	3.42	.75	.62	.33	.13	81.05	.72	.39	6.71	2.02	100.02*
District 69 Fields	.11	0	0	11.83	19.83	16.74	4.90	.64	27.72	17.16	.32	.75	100*

* totals don't add to 100 due to rounding of data

Apportioning 68 Sportfield Costs

Taking out the non participating jurisdictions means that:

- Electoral Area A taxpayers pay 3.4%
- Electoral Area B taxpayers pay .6%
- Electoral Area C taxpayers pay 3.6%
- City of Nanaimo taxpayers pay 85.3%
- District of Lantzville taxpayers pay 7.1%



RDN REPORT	
CAO APPROVAL <input checked="" type="checkbox"/>	
EAP	
GOV	
R-D	
BOARD	<input checked="" type="checkbox"/> Nov 23 '10

MEMORANDUM

TO: Tom Osborne
General Manager of Recreation and Parks

DATE: November 12, 2010

FROM: Dean Banman
Manager of Recreation Services

FILE:

SUBJECT: Recreation Facility and Sports Field Services Agreements

ORIGINAL

PURPOSE

To renew the Sports Field and Recreation Services Agreements.

BACKGROUND

The Regional District has since 2000, shared in the cost of certain municipal recreation facilities and sports fields through agreements with the City of Nanaimo, the City of Parksville and the Town of Qualicum Beach.

In District 68, the City of Nanaimo, District of Lantzville and Electoral Areas 'A', 'B' and 'C' share in the operating costs of the City's four major recreation centres (ice arenas and pools), eleven City sports fields and two Electoral Area sports fields (Area 'B' and Area 'C'). In District 69, Electoral Areas 'E', 'F', 'G' and 'H' share in the operating costs of two City of Parksville sports fields, one Town of Qualicum Beach sports field, and one in Electoral Area 'E'. The jurisdiction that owns the facility is responsible for capital cost improvement exceeding \$10,000.

Cost sharing for the current agreement is based on usage of the facilities determined by a statistically valid survey that is to be done every to five years. The current agreements will expire December 31, 2010. The firm Professional Environmental Recreation Consultants Ltd. (PERC) was engaged earlier this year to conduct the survey required under the agreement. The survey results and PERC's analyses of the survey data is attached as *Appendix A*.

Survey Methodology

While no data or survey system is 100% accurate, the methodology used for this survey can be expected to provide similar results with a margin of error no greater than 2.5%, 19 times out of 20. This level of accuracy exceeds the industry standard of 5%, in 19 times out of 20 replications. Data was obtained by reviewing registration data, booking data and attending public drop in sessions at which address information was obtained from patrons exiting the facility.

Usage at the three types of facilities (arenas, pools, sports fields) was weighted to provide as accurate a reflection of how the facilities are used as possible. The profile of usage at pools is typically 50% from drop in use, 40% from program registrations and 10% through rentals. By contrast arenas and sports fields are mostly re (90% and 100% respectively) towards group rentals by contrast arenas and sports

fields are mostly rented by user groups (90% and 100% respectively). Complete definitions for these categories can be found under the section titled “Methodology” in the attached PERC report.

As will be discussed under Financial Implications below, there have been some significant changes in the participating member’s usage patterns. It was anticipated that survey results would vary relatively little between survey cycles, however, a review of the last three surveys indicates that relying on single data cycles has resulted in more, rather than less, volatility. Staff suggest consideration of an averaging approach to reduce this volatility and will discuss in more detail below.

Alternative Funding Models for Other Recreation Services

The Board had also requested that usage information be obtained for the Regional District’s own facilities which are located in District 69, as well as the profile of participants in recreation programs offered through the Northern Community Recreation service. This additional information was collected during the recent survey. Those findings are recommended to be included as part of a review of cost sharing in other services following a recent Regional Services Review request by the Town of Qualicum Beach, in order to evaluate the total impact should further changes be recommended.

ALTERNATIVES

1. Authorize a renewal of the Recreation Facilities and Sports Field Agreements for a five year term commencing January 1, 2011 based on the 2010 survey.
2. Authorize a renewal of the Recreation Facilities and Sports Field Agreements for a fifteen year term commencing January 1, 2011 based on the average of the last three surveys conducted.
3. Do not authorize the agreements under the current terms and conditions and provide alternate direction.

FINANCIAL IMPLICATIONS

Alternative 1

There have been some significant changes in usage patterns since 2005 as reflected in the summary tables below. In District 68 usage by residents of Lantzville, Electoral Area A and Electoral Area C have increased, while both the City of Nanaimo and Electoral Area B usage has declined.

2010 Usage Survey Results Compared to 2001 and 2005

I. District 68 Recreation Facilities

Participant	2001	2005	2010	Change from 2005
City of Nanaimo	87.9	88.6	86.4	(2%)
District of Lantzville	1.4	3.2	4.9	53%
Electoral Area A	4.3	4.2	4.8	14%
Electoral Area B	4.9	1.7	0.7	(59%)
Electoral Area C/D	1.5	2.3*	3.2	39%

II. District 68 Sports Fields

Participant	2001	2005	2010	Change from 2005
City of Nanaimo	85.0	86.7	85.3	(2%)
District of Lantzville	5.0	6.0	7.1	18%
Electoral Area A	7.7	3.4	3.4	(1%)
Electoral Area B	0.4	0.3	0.6	99%
Electoral Area C/D	1.9	3.6*	3.6	(1%)

* combined Electoral Area C & remainder Electoral Area D

In District 69 usage by residents of Electoral Area F has increased by 60%, with lesser changes among the remaining participating areas.

III. District 69 Sports Fields

Participant	2001	2005	2010	Change from 2005
City of Parksville	30.8	31.4	28.2	(10%)
Town of Qualicum Beach	22.4	18.8	17.5	(7%)
Electoral Area E	10.5	11.2	12.0	7%
Electoral Area F	14.6	12.6	20.2	60%
Electoral Area G	17.3	21.4	17.1	(20%)
Electoral Area H	4.4	4.6	5.0	9%

The financial implications of the above noted changes are shown in the two tables below. The first table shows the combined result which applies in District 68 and the combined percentage change.

Southern Community Recreation (facilities & sports fields)	2010 Budget	2010 Revised	Dollar Change	Percent Change
City of Nanaimo	6,948,105	6,787,330	(160,775)	(2%)
District of Lantzville	302,490	427,485	124,995	41%
Area A	322,120	359,650	37,530	12%
Area B	112,375	54,180	(58,195)	(52%)
Area C	205,490	261,935	56,445	27%
	7,890,580	7,890,580		

Northern Community Recreation (sports fields)	2010 Budget	2010 Revised	Dollar Change
City of Parksville	164,1485	147,420	(16,725)
Town of Qualicum Beach	98,280	91,485	(6,795)
Area E	58,550	62,730	4,180
Area F	65,870	105,595	39,725
Area G	111,870	89,390	(22,480)
Area H	24,045	26,140	2,095
	522,760	522,760	

Alternative 2

With three survey cycles available, an alternative to the use of a single data set is to consider averaging the results over multiple data sets. This averaging approach has been useful in other situations which rely on survey type data such as the measurement of annual sewage flows which is used for apportioning costs for wastewater treatment.

In District 68, the results of averaging, reduces the change for the District of Lantzville from 41% to 19%. Similarly the reduction to Electoral Area B is lowered from a negative 52% to a negative 14%.

In District 69 averaging reduces the increase in Electoral Area F from 60% to 25%. The remaining District 69 participants have had less volatility over the three survey cycles and those remaining changes are more modest.

Southern Community Recreation (facilities & sports fields)	2010 Budget	2010 Revised	Dollar Change	Percent Change
City of Nanaimo	6,948,1075	6,869,350	(78,756)	(1%)
District of Lantzville	302,490	358,850	56,360	19%
Area A	322,120	370,435	48,310	15%
Area B	112,375	96,735	(15,638)	(14%)
Area C	205,490	195,210	(10,278)	(5%)
	7,890,580	7,890,580		

Northern Community Recreation (sports fields)	2010 Budget	2010 Revised	Dollar Change	Percent Change
City of Parksville	164,145	157,350	(6,795)	(4%)
Town of Qualicum Beach	98,280	102,460	4,180	4%
Area E	58,550	58,550	-	0%
Area F	65,870	82,595	16,725	25%
Area G	111,870	97,235	(14,635)	(13%)
Area H	24,045	24,570	525	2%
	522,760	522,760		

If this approach were supported, staff would also recommend a longer term agreement covering 15 years with surveys conducted every five years. Survey data would be averaged over the three most recent survey periods.

SUSTAINABILITY / CITIZEN IMPLICATIONS

The availability of recreational facilities is of benefit to all residents in the region. The current approach to funding these facilities achieves the goal of recognizing that not all areas benefit in quite the same way, particularly with respect to access. A survey captures the ebb and flow of residents within the region ensuring that the cost of municipal facilities is reasonably shared by all who use them.

The amount of use could be expected to correspond to some degree with the proportion of population in each area of the Regional District. The tables below indicate the usage data results compared to the 2006 census. In District 68, with the exception of Electoral Area B, there is a relatively strong correlation between population and usage. The correlation is also strong in District 69.

I. District 68 Recreation Facilities

Participant	2002 to 2004 % Share	2001 Census %	2005 to 2010 % Share	2006 Census %	2010 survey results
City of Nanaimo	87.9	82.5	88.6	81.8	86.4
Electoral Area A	4.9	7.3	4.2	7.3	4.8
Electoral Area B	1.5	4.0	1.7	4.2	0.7
Electoral Area C/D	1.4*	1.0	2.3*	2.9	3.2
District of Lantzville	4.3	5.2	3.2	3.8	4.9

II. District 68 Sports Fields

Participant	2002 to 2004 % Share	2001 Census %	2005 to 2010 % Share	2006 Census %	2010 survey results
City of Nanaimo	85.0	82.5	86.7	81.8	85.3
Electoral Area A	7.7	7.3	3.4	7.3	3.4
Electoral Area B	0.4	4.0	0.3	4.2	0.6
Electoral Area C/D	1.9*	1.0	3.6*	2.9	3.6
District of Lantzville	5.0	5.2	6.0	3.8	7.1

* combined Electoral Area C & remainder Electoral Area D

III. District 69 Sports Fields

Participant	2002 to 2004 % Share	2001 Census %	2005 to 2010 % Share	2006 Census %	2010 survey results
City of Parksville	30.8	27.3	31.4	25.9	28.2
Town of QB	22.4	18.3	18.8	20.0	17.5
Electoral Area E	10.5	12.8	11.2	13.3	12.0
Electoral Area F	14.6	14.7	12.6	15.8	20.2
Electoral Area G	17.3	18.6	21.4	16.6	17.1
Electoral Area H	4.4	8.2	4.6	8.4	5.0

CONCLUSIONS

The cost sharing agreements for municipal recreation facilities and sports fields expire in December 2010. Under the agreements a facility usage survey is completed at the end of each term. This report summarizes the results of the survey conducted over the course of this summer. Some changes have occurred which give rise to some concern that using a single data set results in undue volatility. For example, the District of Lantzville's share would rise by 41%, Electoral Area B is reduced by 52% and Electoral Area F's share would rise by 60%.

Following questions received at the Board seminar regarding the validity and reliability of the survey data, staff reviewed the averaging approach with the survey consultant and were advised that when pools (with margin of error of 2.5%) and arenas (with a margin of error much smaller) are combined, the average margin of error is likely to be only about 1% or 1.5% (~ 1.25%). This is demonstrated in how close the three data samples are correlated. From a statistical standpoint, the data from the three surveys show surprisingly little shift, and all three speak to the validity and reliability of each survey undertaken. As a result, shifts ranging from 1.4% to 1.0% to 2.3% are not a statistically significant variation between results.

Having said that, even small shifts in usage may result in large swings in cost allocation with these variations. Averaging the survey results will lessen the impact of those swings both positively and

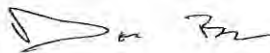
negatively on all participants. In 2000 the Board adopted a policy of using usage statistics to apportion costs for recreation facilities and sports fields and as a result this method will always experience some swings. If the Board no longer supports this method as a valid measure of cost apportionment, alternatives would include cost apportionment on the basis of assessment, cost apportionment on the basis of population, or cost apportionment on the basis of a combination of the values and usage.

With the three survey cycles available, the recommended alternative to the use of a single data set is to consider averaging the results over multiple data sets. This averaging approach has been useful in other situations in the Regional District where cost apportionment is based on usage data such as averaging the measurement of annual sewage flows in allocating costs for wastewater treatment. If the Board supports this approach, averaging will reduce the change for the District of Lantzville from 41% to 19%. Similarly, the reduction for Electoral Area B will change from a negative 52% to a negative 14%, and for Electoral Area F the change will reduce from 60% to 25%.

If the averaging approach is supported by the Board, staff would recommend entering into a fifteen year cost sharing agreement, with survey conducted at five year intervals and cost sharing based on the average of the three most recent survey data sets. Staff are of the opinion that this approach is the most equitable form of cost sharing which recognizes the sensitivity of the survey data, and recommend that the Board support alternative two.

RECOMMENDATION:

1. That the Regional District Board authorize a renewal of the District 68 Recreation Facility and Sports Field Agreement, attached as *Appendix B*, for a fifteen year term commencing January 1, 2011 and expiring December 31, 2025, with cost sharing based on the average of the last three surveys conducted.
2. That the Regional District Board authorize a renewal of the District 69 Sports Field Services Agreement, attached as *Appendix C*, for a fifteen year term commencing January 1, 2011 and expiring December 31, 2025, with cost sharing based on the average of the last three surveys conducted.



Report Writer



General Manager Concurrence



C.A.O. Concurrence