



Transport Canada Transports Canada

Navigation Protection Program  
Suite 610, 800 Burrard Street  
Vancouver B.C. V6Z 2J8

Your file

Our file  
**2017-500079**

May 18, 2017

BC Hydro  
Suite 600 - Four Bentall Ctr  
1055 Dunsmuir St. PO Box 49260  
Vancouver, BC V7X 1V5

**Attention: Karen von Muehldorfer**

**RE: Notice to the Minister\permission to proceed under the *Navigation Protection Act* for Fish Habitat Compensation Structures, located at 56° 11' 19.35" N x 120° 50' 51.23" W, Peace River, Site 108R Peace River and West, East and South side channel on the South bank, in the Province of British Columbia**

The Minister of Transport has determined that your work is not likely to substantially interfere with navigation.

Therefore, your work is permitted under the NPA s.9(1) Construction, and you may proceed pursuant to the attached plans (13) in accordance with the following terms and conditions:

1. The NPA Approval and its Terms and Conditions shall be posted at the dam site office.
2. As built plans of the works are to be forwarded to Transport Canada upon completion of the project.
3. The proponent is required to conduct a post-construction survey of the Peace River mainstem portion of the work and submit the results to Transport Canada within 6 months of completion of the work.
4. The proponent shall conduct a survey of the channels 5 years after the dam begins operation and shall submit that survey to Transport Canada for review. Survey will confirm existing depth, any significant infilling and existing or potential bank failures.
5. In the event that the operation of the above works is terminated prior to completion, it will be the proponent's responsibility to remove the works and associated equipment in its entirety from the waterway including any anchors and pilings. The banks and bed of the waterway disturbed by the works shall be contoured to match the local conditions as required.
6. Provide adequate information about the fish habitat enhancement work using the Boater Communications Protocol, and the following actions:
  - For the duration of inwater works, post a notice at the Peace Island Park boat launch
  - On the owner website, on a web page related to the project

7. Upon completion of the work and removal of equipment and temporary works, provide adequate information about the fish habitat enhancement channels layout and depths using the Boater Communications Protocol, and the following actions:
  - For 1 year, posted notice at the Peace Island Park, boat launch
  - Handout or mail to every resident of Old Fort
  - On the owner website, on a page related to the project for a minimum of 1 year
8. A safety boat shall be manned and monitoring the river at the site of the work while equipment is working in the mainstem of the Peace River
9. No equipment shall be moored or secured with cables unless the equipment is in an area isolated upstream and downstream by berms and no boat traffic is able to use that portion of the waterway.
10. Fish habitat complexes cannot fully obstruct the West, East and South side channels and access for small boats must be maintained.
11. Install and maintain a yellow flashing light on the outermost extremity of any equipment, construction machinery or barges anchored or left in or on the waterway overnight. The lights shall be visible upstream and downstream.
12. Any temporary structures (pilings, causeways, cofferdams or berms) into the main stem of the Peace River to support equipment or for access will require the following conditions;
  - Shall mark the works every 50m with orange high visibility markers to be seen from both upstream and downstream.
  - Install and maintain flashing yellow lights every 50m on the works. The lights shall be in operation in periods of darkness or limited visibility and to be seen from both upstream and downstream.
  - Inspect and maintain weekly all lights and markings to ensure function and correct positioning.
13. If the isolation berms are wetted on the river side, the following conditions apply;
  - Shall mark the berms with orange high visibility markers to be seen from the wetted side.
  - Install and maintain a flashing yellow light on berms. The lights shall be in operation in the periods of darkness or limited visibility.
  - Inspect and maintain weekly all lights and markings to ensure function and correct positioning.
14. Install and maintain warning signs on both banks of the river at locations, approximately 1.3 km downstream of Old Fort. Signs shall be a minimum of 72" x 48", with a white background and black lettering, with text as outlined below

#### **WARNING INSTREAM WORKS AHEAD**

15. Install and maintain warning sign on Peace River Construction Bridge facing upstream. Sign shall be a minimum of 72" x 48", a white background with black lettering, with text as outlined below

#### **WARNING INSTREAM WORKS AHEAD**

The owner is responsible to ensure the temporary construction works are designed and maintained to withstand local weather conditions and the wash of vessels transiting the area.

Pursuant to Sec. 34 of the Navigation Protection Act, the owner shall provide unimpeded access to the Minister or their representatives for inspection purposes.

Pursuant to Sec. 5 of the Navigable Waters Works Regulations, no person shall permit any tools, equipment, vehicles, temporary structures or parts thereof used or maintained for the purpose of building or placing a work in a navigable water to remain in such water after the completion of the project.

Pursuant to Sec. 6 of the Navigable Waters Works Regulations, where a work or a portion of a work that is being constructed or maintained in a navigable water causes debris or other material to accumulate on the bed or the surface of such water, the owner of that work or portion of that work shall cause the debris or other material to be removed to the satisfaction of the minister.

This permission relates only to the effect of your work on navigation under the NPA and does not grant any rights related to the ownership of the bed of the waterway.

It is the owner's responsibility to comply with any other applicable laws and regulations.

Please note that the NPA, amongst other obligations, requires the owner to immediately notify the Minister if his work causes or is likely to cause serious or imminent danger to navigation and take reasonable measures to remediate the danger to navigation (section 12 of the NPA).

**Should you have any questions, please do not hesitate to contact our office in Vancouver by phone at (604) 775-8867 or by e-mail at [NPPAC-PPNPAC@tc.gc.ca](mailto:NPPAC-PPNPAC@tc.gc.ca).**

Respectfully,



Colin Parkinson  
Navigation Protection Program Officer  
Programs Group  
Transport Canada  
Pacific Region

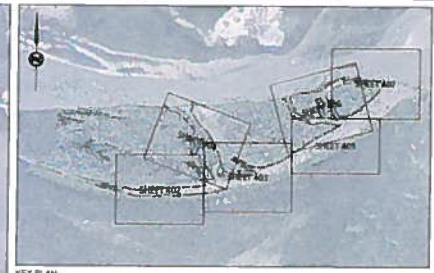
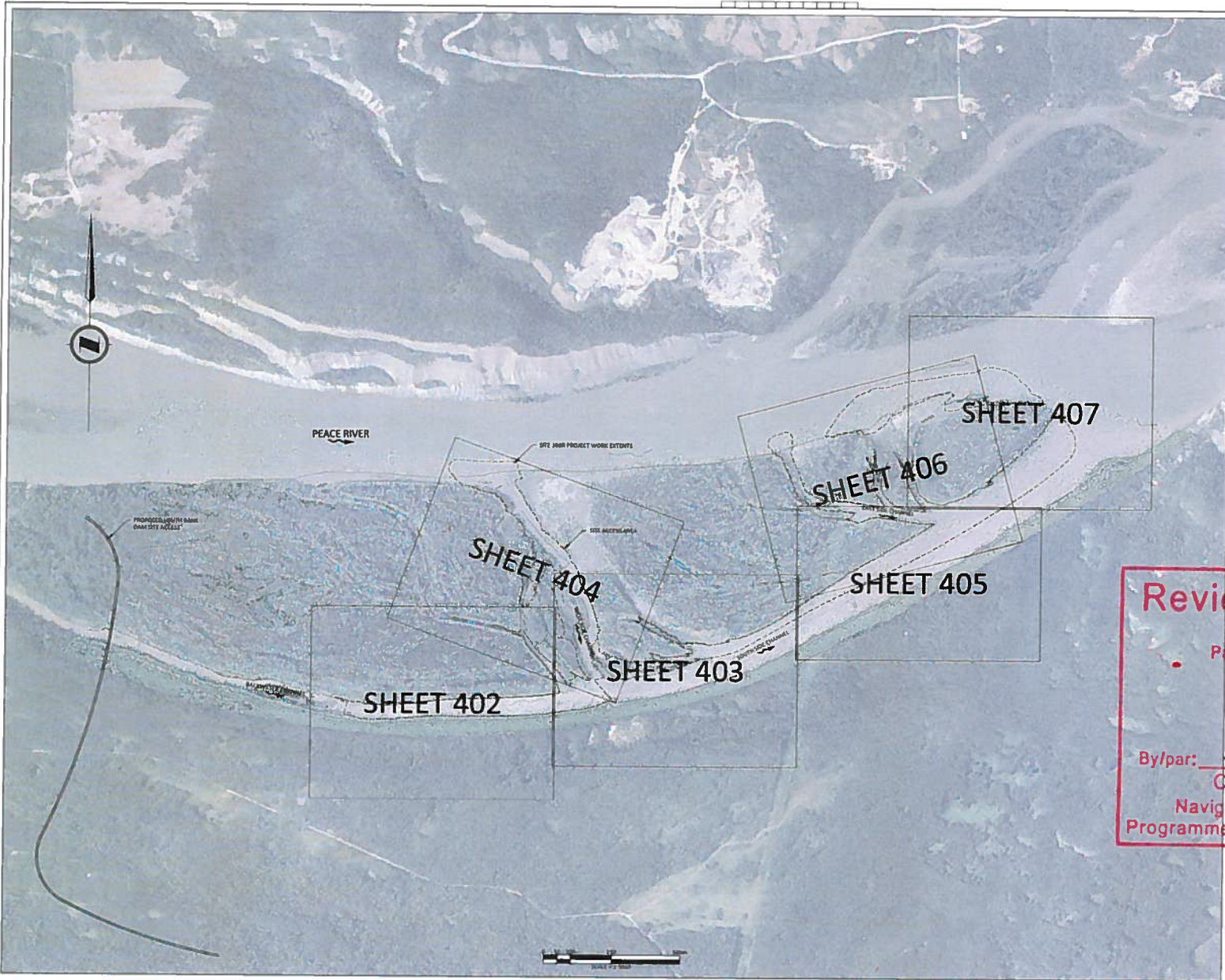
CP/co


cc: DFO  
[Brian.Naito@dfo-mpo.gc.ca](mailto:Brian.Naito@dfo-mpo.gc.ca)  
[Stephanie.Major@dfo-mpo.gc.ca](mailto:Stephanie.Major@dfo-mpo.gc.ca)

FLNRO - [Keith.Hansen@gov.bc.ca](mailto:Keith.Hansen@gov.bc.ca)

CEAA - [Compliance.Conformite@ceaa-acee.gc.ca](mailto:Compliance.Conformite@ceaa-acee.gc.ca)

First Nation's





**Reviewed / Examiné**  
 Page 1 of de 13  
 2017-500079  
 MAY 08 2017  
 By/par:   
**COLIN PARKINSON**  
 Navigation Protection Program /  
 Programme de protection de la navigation

- NOTE:
1. TRACEARY BC HYDRO DB111
  2. BATHYMETRIC SURVEY IN WIDAL AREA BY HRC 2015
  3. TOPOGRAPHIC SUPPLEMENTED WITH BC HYDRO LGAR (D213)
  4. BATHYMETRIC SURVEY OUTSIDE OF HRC 2015 SUPPLEMENTED WITH KINGST PMSOD (D213)
  5. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED
  6. ALL ELEVATIONS ARE TO THE GEODETIC SURVEY OF CANADA DATUM
  7. ALL SLOPES IN % UNLESS OTHERWISE NOTED
  8. DRAWINGS TO BE READ IN CONJUNCTION WITH CONSTRUCTION SPECIFICATIONS

NO	REVISIONS	DATE	DESIGNED	DRAWN	CHECKED	IN CHARGE	APP'D	REV	BY	DATE
1	ISSUED FOR REVIEW	24 NOV 2015	J GLAWDEL	BMC	KEH	AAB			JSG	BMC
2	UPDATED WITH VALUE ENGINEERING OPTIMISATIONS	25 SEPT 2015	J GLAWDEL	BMC	BKH	JSG			JSG	BMC
3	UPDATED WITH COMMENTS	11 AUG 2015	J GLAWDEL	BMC	BKH	JSG			JSG	BMC
4	UPDATED WITH COMMENTS	26 JUN 2015	J GLAWDEL	BMC	KEH	JSG			JSG	BMC
5	ISSUED FOR REVIEW	09 APR 2015	J GLAWDEL	BMC	KEH	JSG			JSG	BMC

REF #	DRAWING NUMBER	TITLE	REF #	DRAWING NUMBER	TITLE
		REFERENCE DRAWINGS			REFERENCE DRAWINGS

  
 WITH CANADIAN PARTNERS



PRELIMINARY  
NOT FOR  
CONSTRUCTION

**SITE C CLEAN ENERGY PROJECT**  
**GENERAL PLANT**  
**FISH HABITAT MITIGATION**  
**DOWNSTREAM - SITE 108R**  
**DETAILED DESIGN**  
**SITE LAYOUT**

DATE: 24 NOV 2015

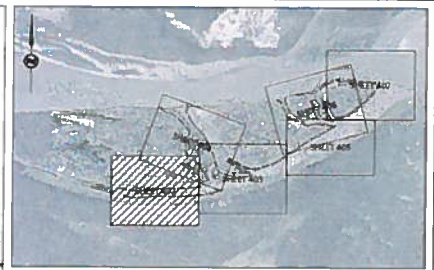
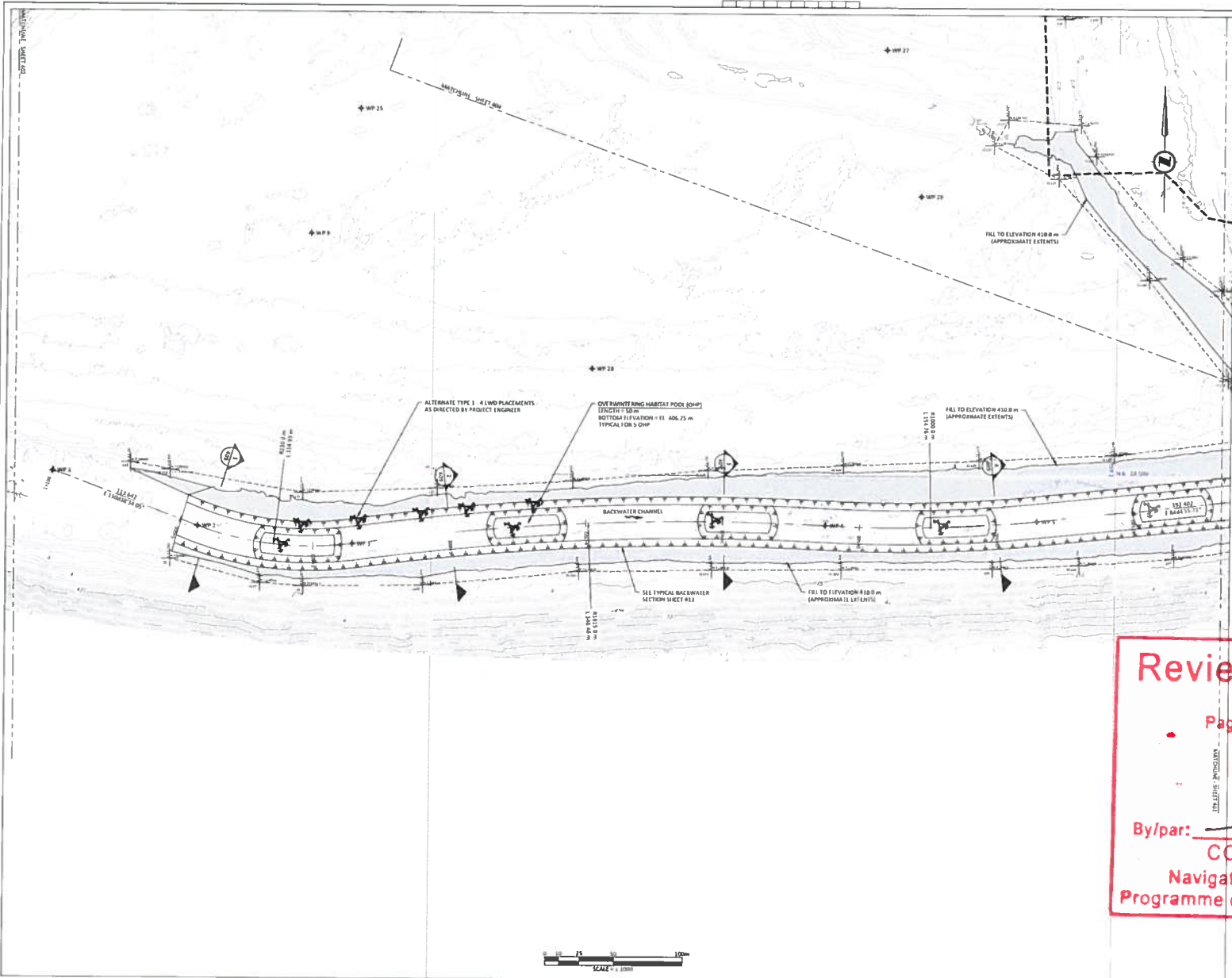
BY: A. BEEZY

APP'D: B. CHURBECK

1016-L13-01

4

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KEY PLAN  
1/15/16

WORK POINT TABLE			
WORK POINT	EASTING	NORTHING	DESCRIPTION
WP1	631222.97	6228501.99	Start Backwater Channel
WP2	631229.32	6228461.85	Tangent Point
WP3	631442.36	6228466.50	Tangent Point
WP4	631787.96	6228463.70	Tangent Point
WP5	631942.51	6228467.11	Tangent Point
WP6	632133.89	6228467.54	Tangent Point
WP7	632147.45	6228409.44	Tangent Point
WP8	632300.87	6228317.31	End Backwater/Wood Side Channel
WP9	631610.40	6228376.23	Entrapment
WP10	633594.59	6226511.80	Entrapment
WP11	631839.41	6229482.28	Entrapment
WP12	632114.04	6228679.82	Entrapment

**Reviewed / Examiné**

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2017-05-08  
**MAY 08 2017**

By/par: COLIN PARKINSON

**COLIN PARKINSON**  
Navigation Protection Program /  
Programme de protection de navigation



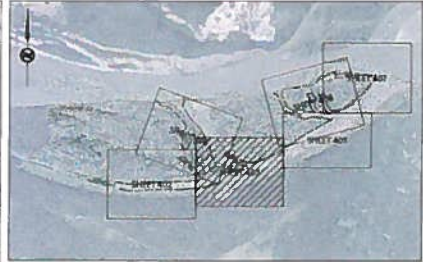
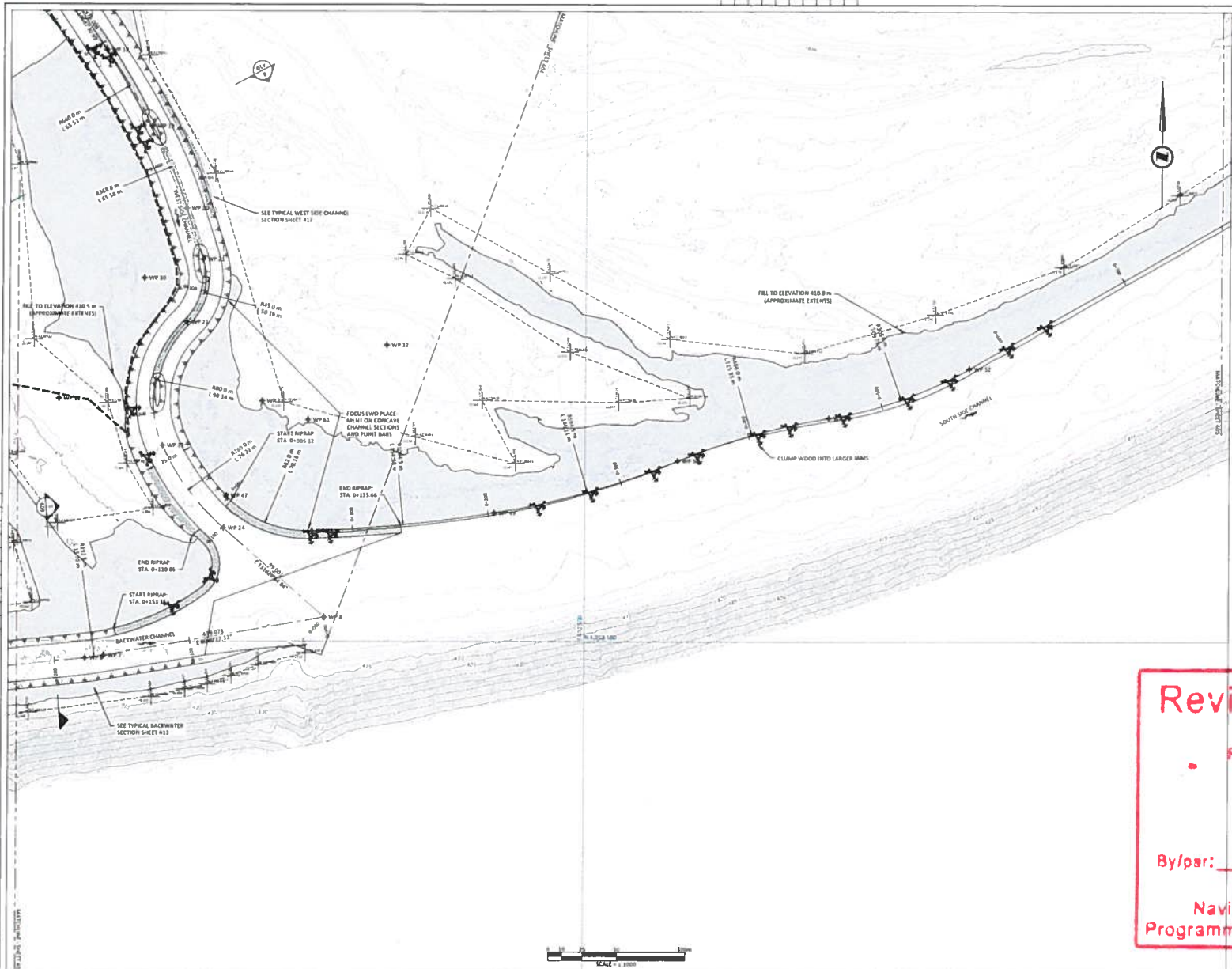
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		REFERENCE DRAWINGS			REFERENCE DRAWINGS

NO	REVISIONS	DATE	DESIGNED	DRAWN	CHECKED	IN CHARGE	APPROVED
4	ISSUED FOR REVIEW	24 NOV 2015	J. GLAWDEL	BMC	REN	AMB	JEG
3	UPDATED WITH VALUE ENGINEERING OPTIONS	25 SEPT 2015	J. GLAWDEL	BMC	REN	JAC	JEG
2	UPDATED WITH COMMENTS	11 AUG 2015	J. GLAWDEL	BMC	REN	JAC	JEG
1	UPDATED WITH COMMENTS	28 JUN 2015	J. GLAWDEL	BMC	REN	JAC	JEG
0	ISSUES FOR REVIEW	09 JUN 2015	J. GLAWDEL	BMC	REN	JAC	JEG

	<b>SITE C CLEAN ENERGY PROJECT</b> GENERAL PLANT FISH HABITAT MITIGATION DOWNSTREAM - SITE 108R DETAILED DESIGN BACKWATER CHANNEL PLAN - STA. 0+228 TO STA. 1+135
PRELIMINARY NOT FOR CONSTRUCTION	DATE: 24 NOV 2015 DRAWN BY: A. BLEZNY CHECKED BY: B. CHALIBECK
SHEET NO: 1016-L-13-402	TOTAL SHEETS: 4 SHEET NO: 4

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WORKPOINT	EASTING	NORTHING	DESCRIPTION
WP6	632131.89	6228487.54	Tangent Point
WP7	632147.45	6228489.44	Tangent Point
WP6	632309.07	6228511.92	End Backwater/West Side Channel
WP12	632114.04	6228679.02	Centrepoint
WP18	632147.45	6228973.06	Tangent Point
WP19	632181.52	6228878.08	Tangent Point
WP20	632207.02	6228818.56	Tangent Point
WP21	632239.08	6228781.04	Tangent Point
WP22	632287.48	6228734.87	Tangent Point
WP23	632330.08	6228644.43	Tangent Point
WP24	632334.31	6228583.52	Tangent Point
WP30	632172.94	6228717.71	Centrepoint
WP11	632126.02	6228671.28	Centrepoint
WP12	632134.18	6228716.34	Centrepoint

- LEGEND
- CONSTRUCTED CHANNEL ISLAND SEE DETAIL SHEET 413
  - CHANNEL CENTRELINE
  - CHANNEL THALINE G
  - CUT SLOPE
  - TYPE 1 MATERIAL
  - TYPE 2 MATERIAL
  - TYPE 3 MATERIAL
  - CLEARING LIMITS

Reviewed / Examiné

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2017-500074

MAY 08 2017

By/par: COLIN PATERSON

Navigation Protection Program  
Programme de protection de la navigation

REF #	DRAWING NUMBER	TITLE	REF #	DRAWING NUMBER	TITLE	DATE	DESIGNER	CHECKER	APPROVER	REVISIONS	DATE	DESIGNER	CHECKER	APPROVER	REVISIONS	DATE	DESIGNER	CHECKER	APPROVER	REVISIONS	
4		ISSUED FOR REVIEW				14 NOV 2015	J.LAWDEL	BAC	SEH	AAB		JNG	BAC	JNG	BAC						
3		UPDATED WITH VALUE ENGINEERING COMMENTS				15 SEPT 2015	J.LAWDEL	BAC	SEH	JNG		JNG	BAC	DPT	SEH						
2		UPDATED WITH COMMENTS				11 AUG 2015	J.LAWDEL	BAC	SEH	JNG		JNG	BAC	DPT	SEH						
1		UPDATED WITH COMMENTS				28 APR 2015	J.LAWDEL	BAC	SEH	JNG		JNG	BAC	DPT	SEH						
0		ISSUED FOR REVIEW				09 APR 2015	J.LAWDEL	BAC	SEH	JNG		JNG	BAC	DPT	SEH						

REF #	DRAWING NUMBER	TITLE	REF #	DRAWING NUMBER	TITLE
		REFERENCE DRAWINGS			REFERENCE DRAWINGS

DATE	BY	DESCRIPTION
24 NOV 2015	B. C. HELMBECK	APPROVED FOR CONSTRUCTION

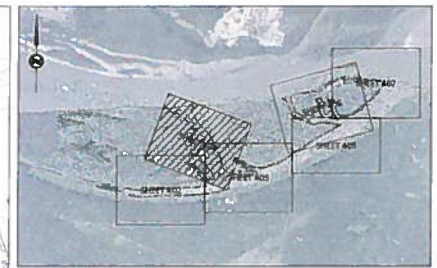
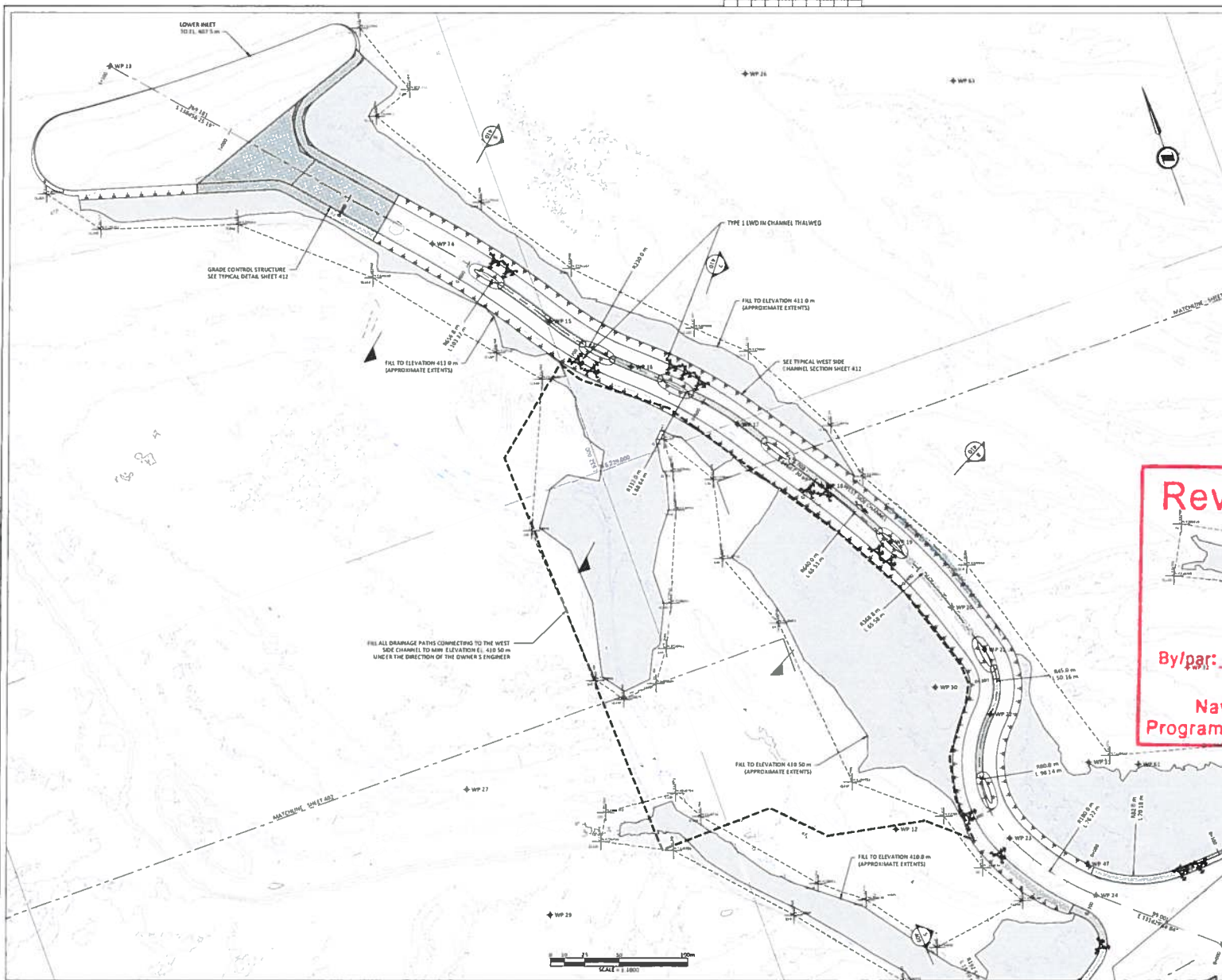
  

DATE	BY	DESCRIPTION
24 NOV 2015	B. C. HELMBECK	APPROVED FOR CONSTRUCTION

DATE	BY	DESCRIPTION
24 NOV 2015	B. C. HELMBECK	APPROVED FOR CONSTRUCTION

nbc hydro inc. 2015. All rights reserved. nbc hydro inc. 2015. All rights reserved. nbc hydro inc. 2015. All rights reserved. nbc hydro inc. 2015. All rights reserved.



KEY PLAN (1/200)

WORKPOINT TABLE			
WORKPOINT	EASTING	NORTHING	DESCRIPTION
WP0	632309.07	623517.52	End Backwater/West Side Channel
WP1	631764.00	622942.29	Start West Side Channel
WP1A	631940.81	622939.29	Tangent Point
WP1B	629002.31	622936.34	Tangent Point
WP1C	628846.90	622804.53	Tangent Point
WP1D	627109.48	622800.15	Tangent Point
WP1E	625477.95	622805.96	Tangent Point
WP19	631015.52	622876.68	Tangent Point
WP20	632207.02	622848.52	Tangent Point
WP21	632219.08	6228781.04	Tangent Point
WP22	632207.02	6228734.87	Tangent Point
WP23	632307.06	6228644.43	Tangent Point
WP24	632334.92	6228583.52	Tangent Point
WP25	631648.68	6228767.91	Centrepoint
WP26	631197.27	6228236.36	Centrepoint
WP27	631679.94	6228177.77	Centrepoint
WP28	631616.49	6228166.63	Centrepoint
WP29	631855.94	6228166.63	Centrepoint
WP30	631176.84	6228166.63	Centrepoint
WP31	632263.80	6228677.20	Centrepoint
WP32	63154.18	6228716.54	Centrepoint

Reviewed & Examined

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MAY 08 2017

By/gpr: COLIN PARKINSON

Navigation Protection Program /  
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CONTRACTED CHANNEL DESIGN SEE DETAIL SHEET 453



V:\Projects\2017\500079\Main\20170514\_DWG\_10113\_450 - 413.dwg

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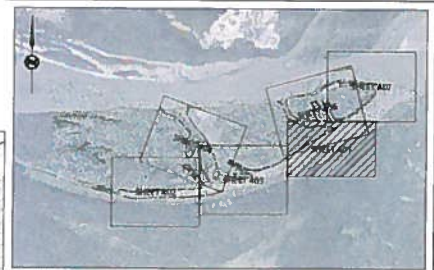
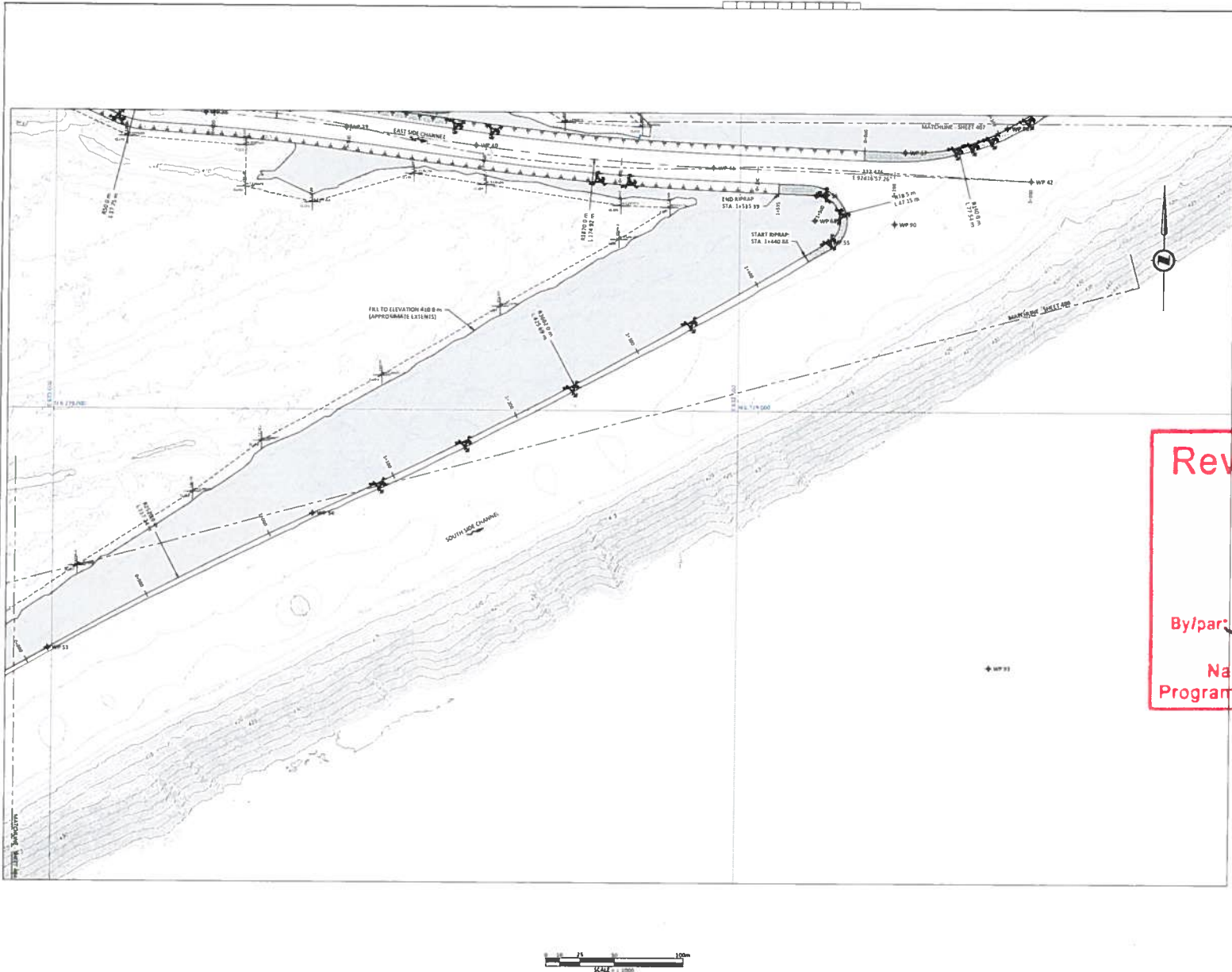
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3 UPDATED WITH VALUE ENGINEERING OPTIONS	25 SEPT 2015	J.GLAWSDEL	BMC	BKH	JWG	JWG	BMC
2 UPDATED WITH COMMENTS	13 AUG 2015	J.GLAWSDEL	BMC	BKH	JWG	JWG	BMC
1 UPDATED WITH COMMENTS	28 JUN 2015	J.GLAWSDEL	BMC	KEH	JWG	JWG	BMC
0 ISSUED FOR REVIEW	09 JUN 2015	J.GLAWSDEL	BMC	KEH	JWG	JWG	BMC
NO	REVISIONS	DATE	DESIGNED	CHECKED	DRAWN	DATE	BY

DATE	24 NOV 2015	BY	B. CHARLBECKA	DATE	24 NOV 2015	BY	A. BLEZNY	DATE	24 NOV 2015

PRELIMINARY NOT FOR CONSTRUCTION							
SITE C CLEAN ENERGY PROJECT GENERAL PLAN FISH HABITAT MITIGATION DOWNSTREAM - SITE 10BR DETAILED DESIGN WEST SIDE CHANNEL PLAN - STA. 0+000 TO STA. 1+056							
DATE	24 NOV 2015	BY	B. CHARLBECKA	DATE	24 NOV 2015	BY	A. BLEZNY



NOT TO BE REPRODUCED WITHOUT THE PERMISSION OF BC HYDRO



KEY PLAN  
1:10000

WORKPOINT	EASTING	NORTHING	DESCRIPTION
WP47	632236.90	6228607.31	Toe to West Side Channel, top of left bank
WP48	632239.85	6228581.45	Tangent Point
WP49	632433.48	6228568.80	Tangent Point
WP50	632567.68	6228619.26	Tangent Point
WP51	632676.54	6228668.84	Tangent Point
WP52	632781.51	6228701.18	Tangent Point
WP53	632996.77	6228824.21	Tangent Point
WP54	633189.79	6228923.75	Tangent Point
WP55	633304.74	6229224.74	Tangent Point
WP56	633538.83	6229159.83	Toe to East Side Channel, top of right bank

Reviewed & Examined

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2016 5200 99

MAY 06 2017

By/par:   
**COLIN PARKINSON**  
 Navigation Protection Program /  
 Programme de protection de la navigation

LEGEND

- TYPE 2 MATERIAL
- TYPE 1 MATERIAL
- MATCHLINE
- LARGE WOODY DEBRIS SEE DETAIL SHEET 413
- CLEARING LIMITS

- NOTE:
- IMAGE BY: BC HYDRO (D013)
  - BATHYMETRIC SURVEY IN WORK AREA BY IWC, 2015
  - TOPOGRAPHIC SUPPLEMENTED WITH BC HYDRO (D013)
  - BATHYMETRIC SURVEY OUTSIDE OF MHC 2015 SUPPLEMENTED WITH RANGIT PIESOLO (D013)
  - ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED
  - ALL ELEVATIONS ARE TO THE GEODETIC SURVEY OF CANADA DATUM
  - ALL SLOPES 2H:1V UNLESS OTHERWISE NOTED
  - DRAWINGS TO BE READ IN CONJUNCTION WITH CONSTRUCTION SPECIFICATIONS

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REF #	DRAWING NUMBER	TITLE	REF #	DRAWING NUMBER	TITLE
REFERENCE DRAWINGS					
REFERENCE DRAWINGS					
REVISIONS					
NO	REVISIONS	DATE	DESIGNED	CHECKED	APPROVED
4	ISSUED FOR REVIEW	24 NOV 2015	J. GLAWDEL	BMC	LEG
3	UPDATED WITH VALUE ENGINEERING OPTIONS	25 SEPT 2015	J. GLAWDEL	BMC	B.H
2	UPDATED WITH COMMENTS	11 AUG 2015	J. GLAWDEL	BMC	B.H
1	UPDATED WITH COMMENTS	20 JUN 2015	J. GLAWDEL	BMC	LEG
0	ISSUED FOR REVIEW	09 JUN 2015	J. GLAWDEL	BMC	LEG

**PRELIMINARY NOT FOR CONSTRUCTION**

**SITE C CLEAN ENERGY PROJECT**

**GENERAL PLANT**

**FISH HABITAT MITIGATION**

**DOWNSTREAM - SITE 106R**

**DETAILED DESIGN**

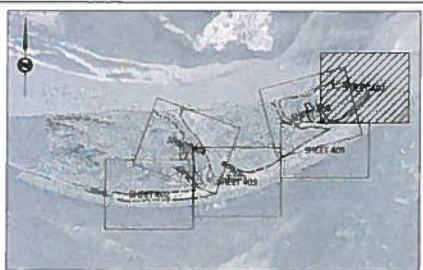
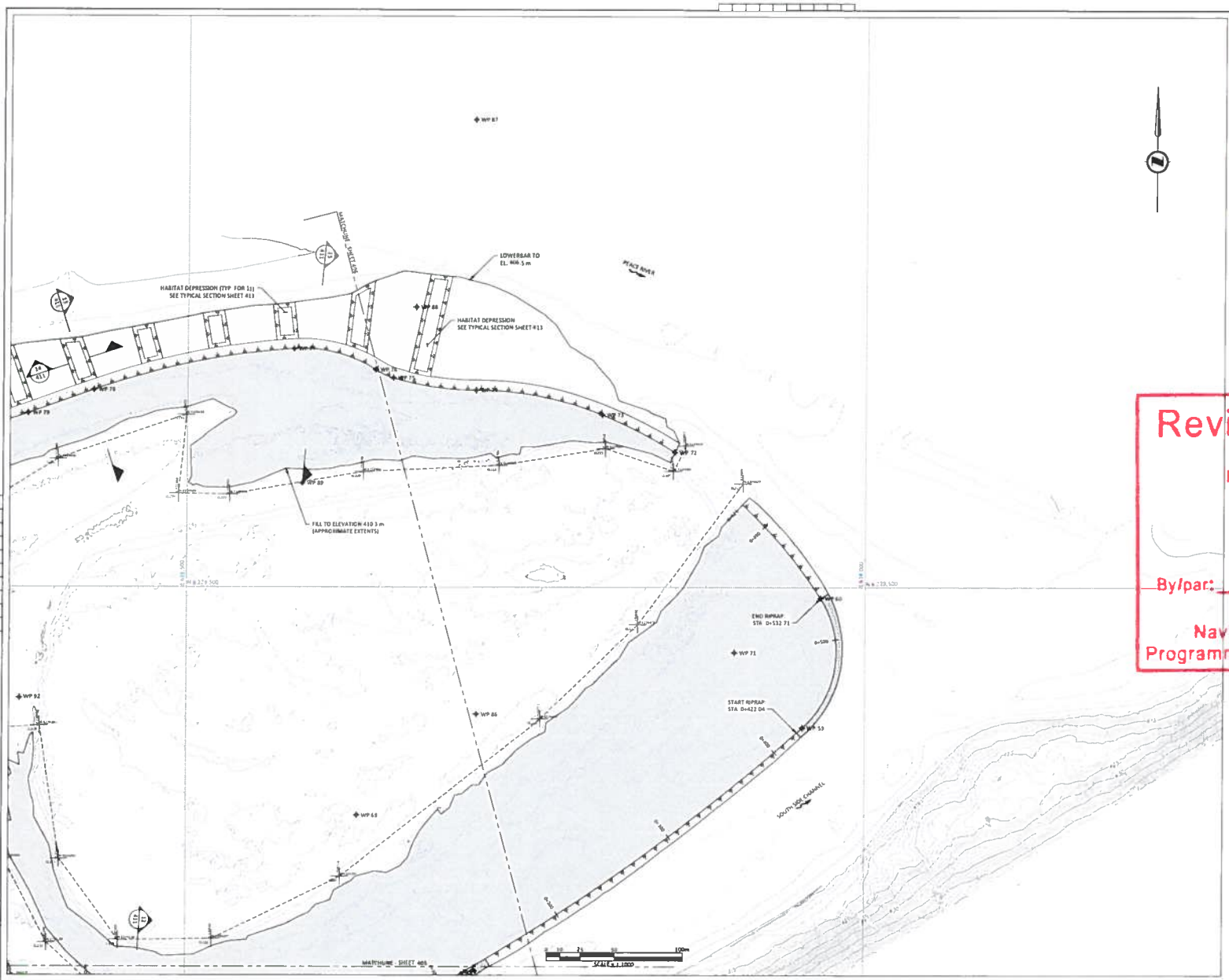
**EAST SIDE CHANNEL PLAN - STA. 0+000 TO STA. 0+600**

DATE	24 NOV 2015	DIST	1016-L13-405
SCALE	A0	SHEET	4

NOT TO BE REPRODUCED WITHOUT THE PERMISSION OF BC HYDRO







KEY PLAN

WORKPOINT TABLE			
WORKPOINT	EASTING	NORTHING	DESCRIPTION
WP57	633620.65	622919.85	The to East Side Channel, top of left bank
WP58	633695.02	6229309.36	Tangent Point
WP59	633958.16	6229396.37	Tangent Point
WP60	633967.17	6229492.15	The to Peace River, top of existing right bank
WP65	633625.98	6229330.91	Centrepoint
WP70	632974.91	6230479.21	Centrepoint
WP71	633963.87	622941.93	Centrepoint
WP72	633959.30	6229600.04	The to Peace River, downstream top of left bank
WP73	633805.54	6229627.96	Tangent Point
WP74	633805.54	6229627.96	Tangent Point
WP75	633805.54	6229627.96	Tangent Point
WP76	633805.54	6229627.96	Tangent Point
WP77	633805.54	6229627.96	Tangent Point
WP78	633805.54	6229627.96	Tangent Point
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WP92	633805.54	6229627.96	Tangent Point
WP93	633805.54	6229627.96	Tangent Point
WP94	633805.54	6229627.96	Tangent Point
WP95	633805.54	6229627.96	Tangent Point

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 2017  
 MAY 11  
 See 79

By/par: COLIN PARKINSON  
 Navigation Protection Program /  
 Programme de protection de la navigation

LEGEND

CUT SLOPE

TYPE 1 MATERIAL

TYPE 2 MATERIAL

TYPE 3 MATERIAL

MAINTENANCE

LARGE WOODY DEBRIS SEE DETAIL SHEET #13

CLEARING LIMITS

NOTE

1. DRAINAGE - BC HYDRO (2013)
2. BATHYMETRIC SURVEY TO WORK AREA BY HMC 2015
3. TOPOGRAPHIC SUPPLEMENTED WITH BC HYDRO LIDAR (2013)
4. BATHYMETRIC SURVEY OUTSIDE OF HMC 2015 SUPPLEMENTED WITH BRIGHT PRESLOD (2013)
5. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED
6. ALL ELEVATIONS ARE ARE TO THE GEODETIC SURVEY OF CANADA DATUM
7. ALL SLOPES IN % UNLESS OTHERWISE NOTED
8. DRAWINGS TO BE READ IN CONJUNCTION WITH CONSTRUCTION SPECIFICATIONS.

nrc **BC HYDRO**

1016-L13-407

SITE C CLEAN ENERGY PROJECT  
 GENERAL PLANT  
 FISH HABITAT MITIGATION  
 DOWNSTREAM - SITE 108R  
 DETAILED DESIGN  
 MAIN CHANNEL BAR

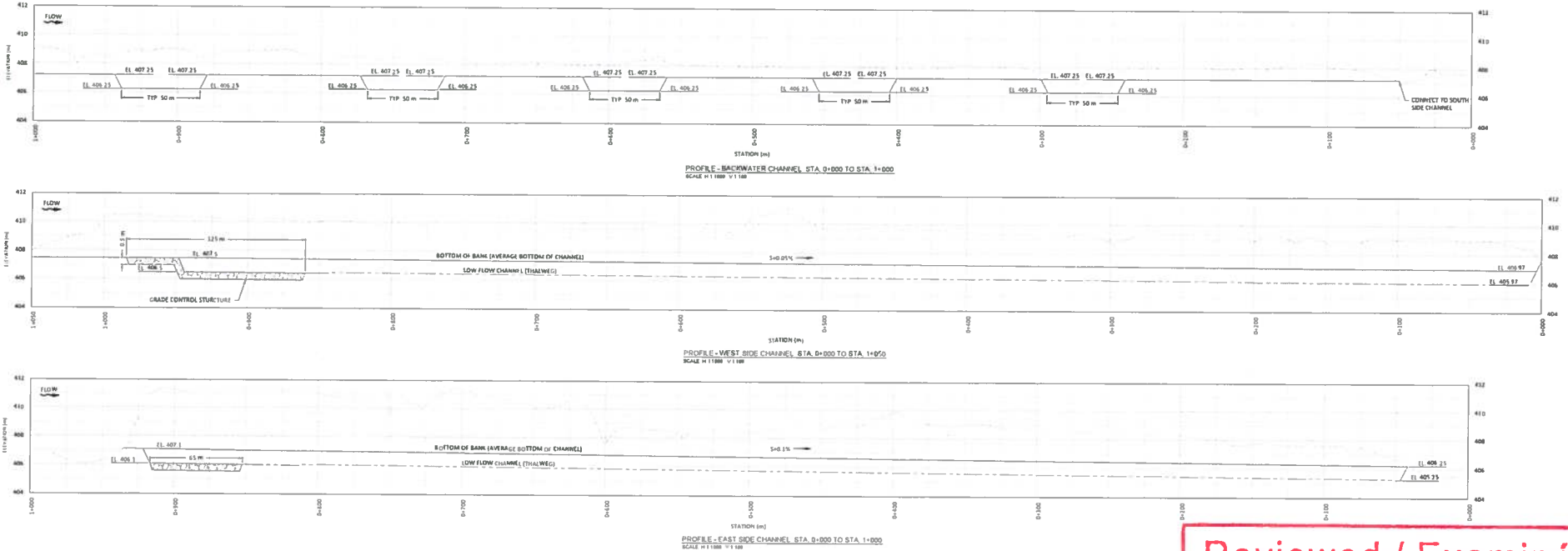
PRELIMINARY NOT FOR CONSTRUCTION


Drawing Name: 1016-L13-407 Title: Main Channel Bar  
 Drawing Number: 1016-L13-407 Date: 24 Nov 2015  
 Scale: 1:2,100

NO	REVISIONS	DATE	DESIGNED	CHECKED	IN CHARGE	APPROVED
1	ISSUED FOR REVIEW	09 JUN 2015	J. CLAWWEL			
2	UPDATED WITH COMMENTS	26 JUN 2015	J. CLAWWEL			
3	UPDATED WITH COMMENTS	11 AUG 2015	J. CLAWWEL			
4	UPDATE WITH VALUE ENGINEERING DIFFERENCES	25 SEPT 2015	J. CLAWWEL			
5	ISSUED FOR REVIEW	24 NOV 2015	J. CLAWWEL	BMC	SEN	MBB

NO	REVISIONS	DATE	DESIGNED	CHECKED	IN CHARGE	APPROVED
1	ISSUED FOR REVIEW	09 JUN 2015	J. CLAWWEL			
2	UPDATED WITH COMMENTS	26 JUN 2015	J. CLAWWEL			
3	UPDATED WITH COMMENTS	11 AUG 2015	J. CLAWWEL			
4	UPDATE WITH VALUE ENGINEERING DIFFERENCES	25 SEPT 2015	J. CLAWWEL			
5	ISSUED FOR REVIEW	24 NOV 2015	J. CLAWWEL	BMC	SEN	MBB

DATE: 24 NOV 2015  
 DRAWING NUMBER: 1016-L13-407  
 SHEET NO: 4



Reviewed / Examiné  
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MAY 08 2017  
 By/par:   
COLIN PARKINSON  
 Navigation Protection Program /  
 Programme de protection de la navigation

EXISTING GROUND      PROPOSED FILL  
 PROPOSED CHANNEL BOTTOM      MAX OPERATIONAL WATER LEVEL (E1 + 2000 m<sup>3</sup>/s)  
 CHANNEL THALWEG      MIN OPERATIONAL WATER LEVEL (E2 + 1800 m<sup>3</sup>/s)



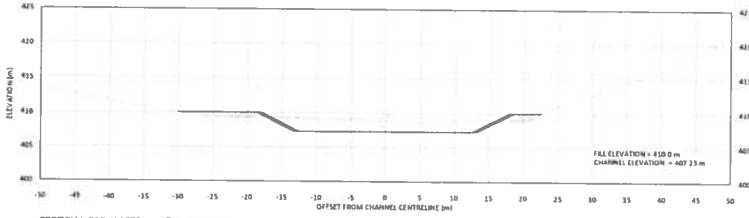
DESIGN	JRG
PROPOSED CHANNEL BOTTOM	BAC
CHANNEL THALWEG	REH
EXISTING GROUND	AMB
STR	
MECH	
GEO	
ELEC	

PRELIMINARY NOT FOR CONSTRUCTION	DATE	24 NOV 2015
	REV	1016-L13-408
SITE C CLEAN ENERGY PROJECT GENERAL PLANT FISH HABITAT MITIGATION DOWNSTREAM - SITE 10BR DETAILED DESIGN PROFILES		SHEET NO. <b>4</b> OF <b>4</b>

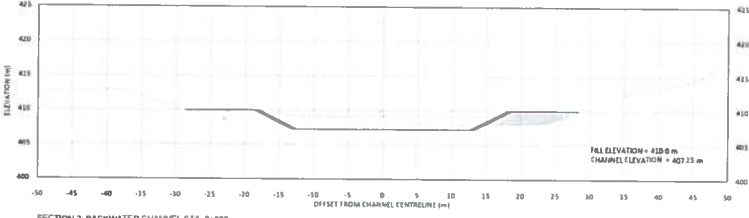
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3	UPDATED WITH VALUE ENGINEERING OPTIONS	25 SEPT 2015	J. GLAWDEL	BAC	REH	JRG				JRG	BAC		
2	UPDATED WITH COMMENTS	11 AUG 2015	J. GLAWDEL	BAC	REH	JRG				JRG	BAC		
1	UPDATED WITH COMMENTS	26 JUN 2015	J. GLAWDEL	BAC	REH	JRG				JRG	BAC		
0	ISSUED FOR REVIEW	09 JUN 2015	J. GLAWDEL	BAC	REH	JRG				JRG	BAC		

REF #	DRAWING NUMBER	TITLE	REF #	DRAWING NUMBER	TITLE

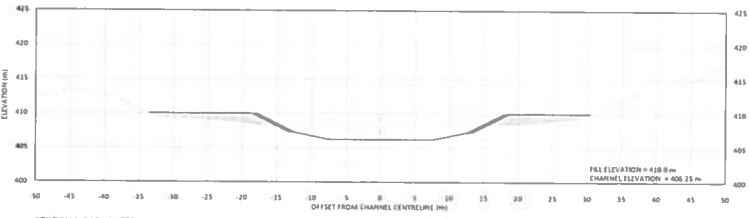
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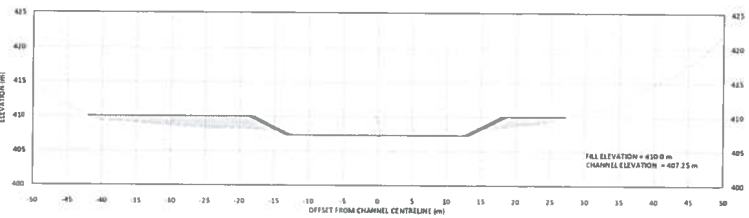
SECTION 1: BACKWATER CHANNEL STA. 0+900  
SCALE: 1:200



SECTION 2: BACKWATER CHANNEL STA. 0+800  
SCALE: 1:200



SECTION 3: BACKWATER CHANNEL STA. 0+000 (AT POOL)  
SCALE: 1:200



SECTION 4: BACKWATER CHANNEL STA. 0+400  
SCALE: 1:200

**Reviewed / Examiné**  
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**MAY 08 2017**  
 By/par:   
**COLIN PARKINSON**  
 Navigation Protection Program /  
 Programme de protection de la navigation

**LEGEND:**  
 --- EXISTING GROUND  
 --- PROPOSED GROUND  
 MAX. OPERATIONAL WATER LEVEL (E = 2000 m<sup>3</sup>/s)  
 MIN. OPERATIONAL WATER LEVEL (E = 1300 m<sup>3</sup>/s)

**nrc** **ICHydro**

**SITE C CLEAN ENERGY PROJECT**  
**GENERAL PLANT**  
**FISH HABITAT MITIGATION**  
**DOWNSTREAM - SITE 108R**  
**DETAILED DESIGN**  
**SECTIONS**

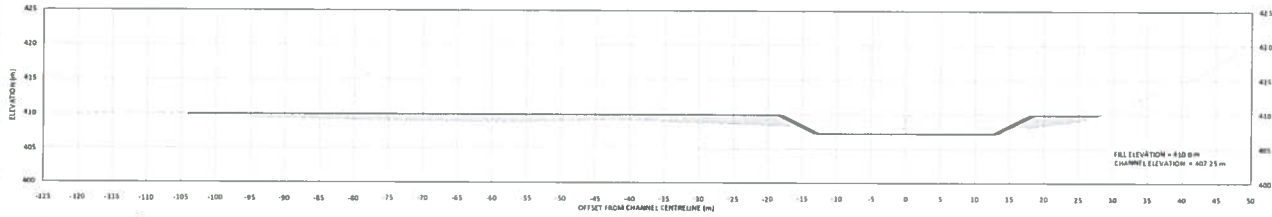
PRELIMINARY  
NOT FOR  
CONSTRUCTION

DATE: 24 NOV 2015  
 DRAW NO: 1016-L13-409  
 SHEET: AO 4

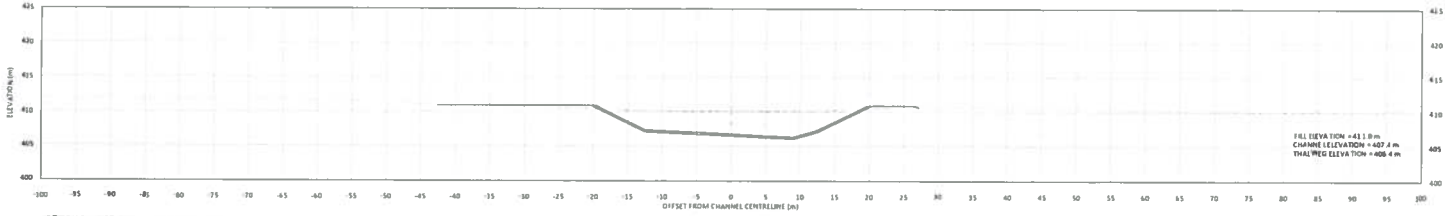
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4	ISSUED FOR REVIEW	24 NOV 2015	J. CLAWDEL	BMC	KEH	AAM
3	UPDATED WITH VALUE ENGINEERING OPTIONS	25 SEPT 2015	J. CLAWDEL	BMC	BRH	JEG
2	UPDATED WITH COMMENTS	11 AUG 2015	J. CLAWDEL	BMC	BRH	JEG
1	UPDATED WITH COMMENTS	28 JUN 2015	J. CLAWDEL	BMC	KEH	JEG
0	ISSUED FOR REVIEW	09 JUN 2015	J. CLAWDEL	BMC	KEH	JEG

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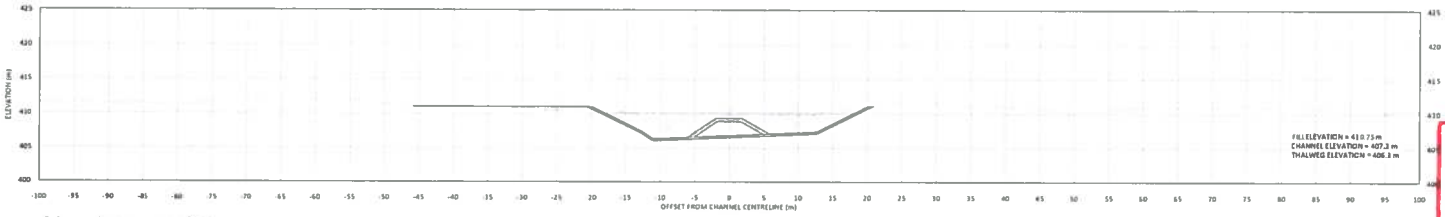
NOT TO BE REPRODUCED WITHOUT THE PERMISSION OF THE PROVIDER



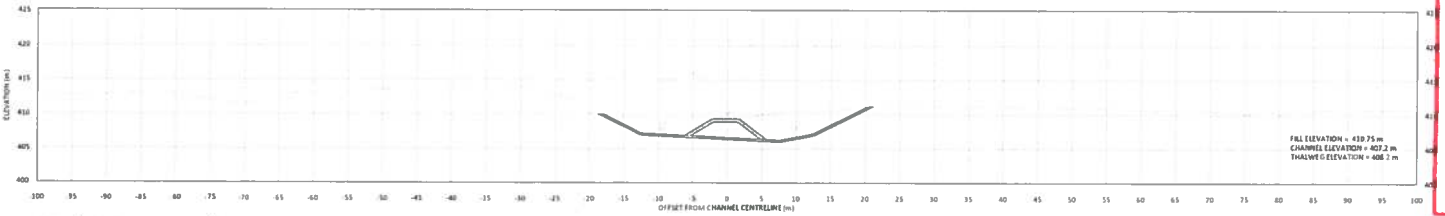
SECTION 5 BACKWATER CHANNEL STA. 0+200  
SCALE 1:20



SECTION 6 WEST SIDE CHANNEL STA. 0+183  
SCALE 1:20



SECTION 7 WEST SIDE CHANNEL STA. 0+127  
SCALE 1:20



SECTION 8 WEST SIDE CHANNEL STA. 0+420  
SCALE 1:20

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MAY 08 2017

By/par:   
COLIN PARKINSON  
Navigation Protection Program /  
Programme de protection de la navigation

LEGEND:  
EXISTING GROUND  
PROPOSED GROUND  
MAX. OPERATIONAL WATER LEVEL (3 = 2000 m<sup>2</sup>/s)  
MIN. OPERATIONAL WATER LEVEL (3 = 300 m<sup>2</sup>/s)

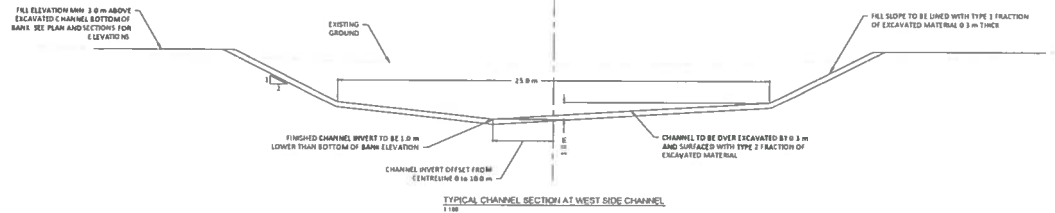


SITE C CLEAN ENERGY PROJECT  
GENERAL PLANT  
FISH HABITAT MITIGATION  
DOWNSTREAM - SITE 108R  
DETAILED DESIGN  
SECTIONS

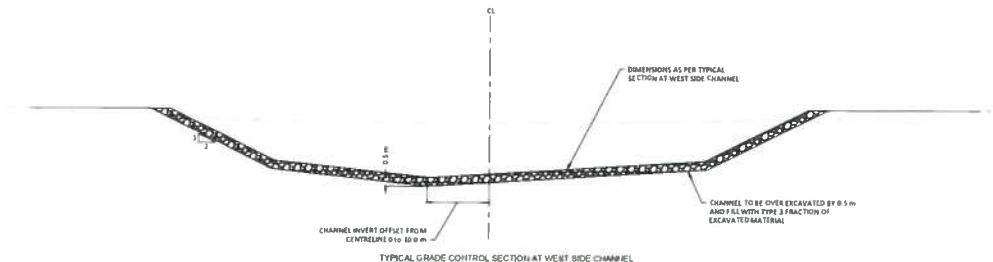
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3	UPDATED WITH VALUE ENGINEERING OPTIONS	25 SEPT 2015	J. CLAWWEL	BMAC	BRH	JRG						
2	UPDATED WITH COMMENTS	11 AUG 2015	J. CLAWWEL	BMAC	BRH	JRG						
1	UPDATED WITH COMMENTS	28 JUN 2015	J. CLAWWEL	BMAC	KEH	JRG						
0	ISSUED FOR REVIEW	09 JUN 2015	J. CLAWWEL	BMAC	KEH	JRG						

REF #	DRAWING NUMBER	TITLE	REF #	DRAWING NUMBER	TITLE
		REFERENCE DRAWINGS			REFERENCE DRAWINGS

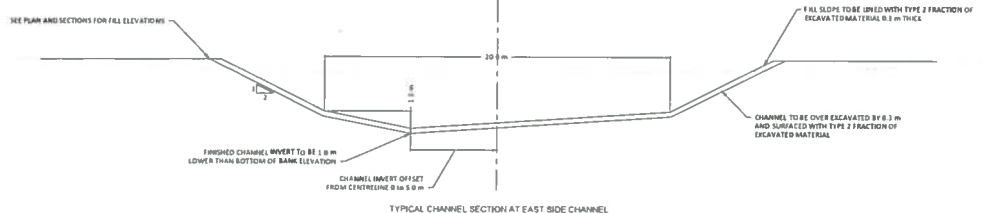




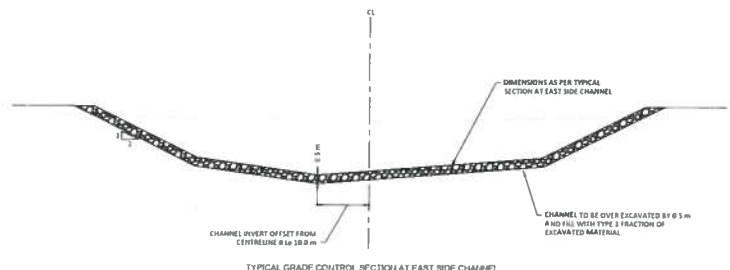
TYPICAL CHANNEL SECTION AT WEST SIDE CHANNEL  
1:100




TYPICAL GRADE CONTROL SECTION AT WEST SIDE CHANNEL  
1:100



TYPICAL CHANNEL SECTION AT EAST SIDE CHANNEL  
1:100



TYPICAL GRADE CONTROL SECTION AT EAST SIDE CHANNEL  
1:100

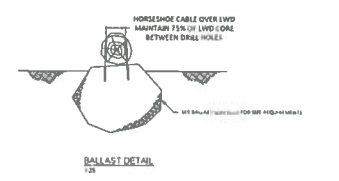
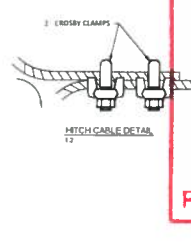
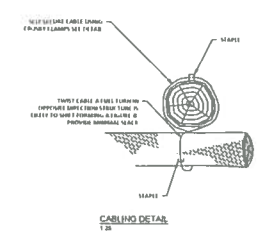
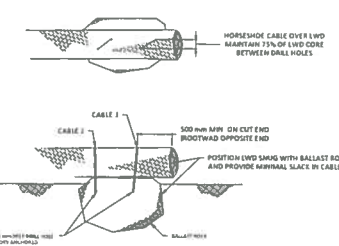
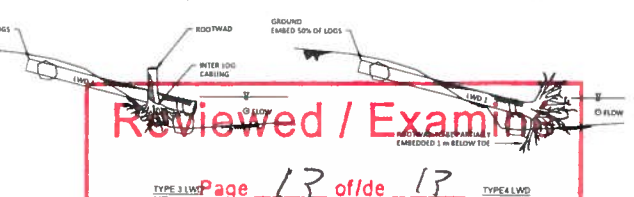
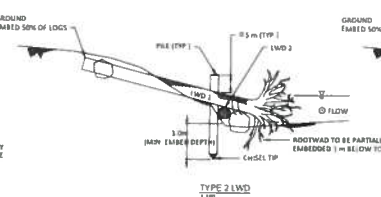
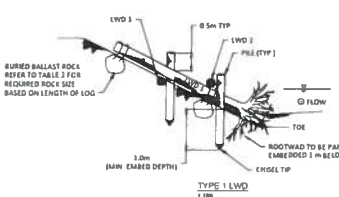
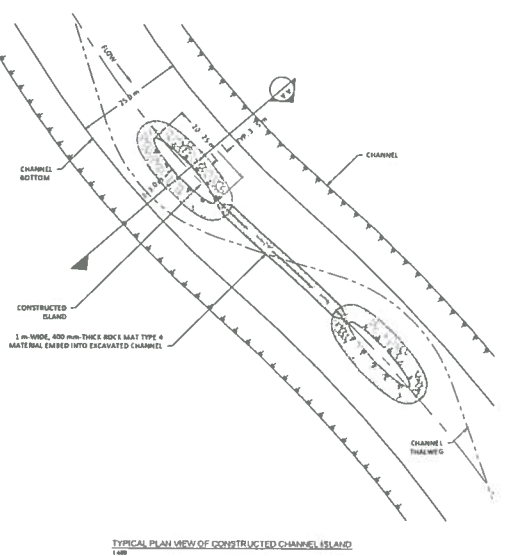
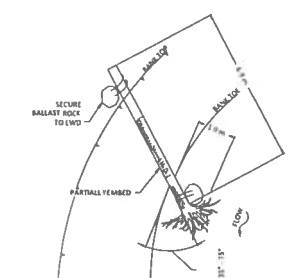
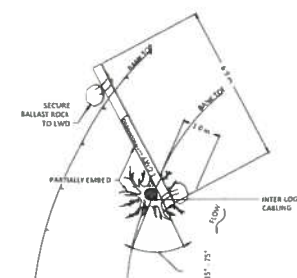
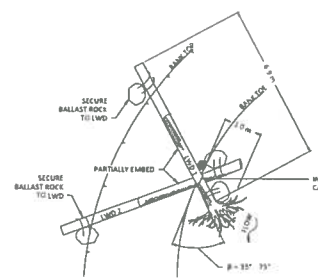
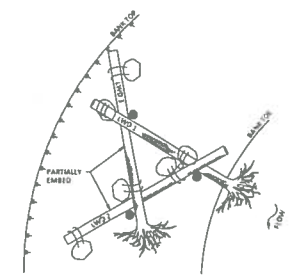
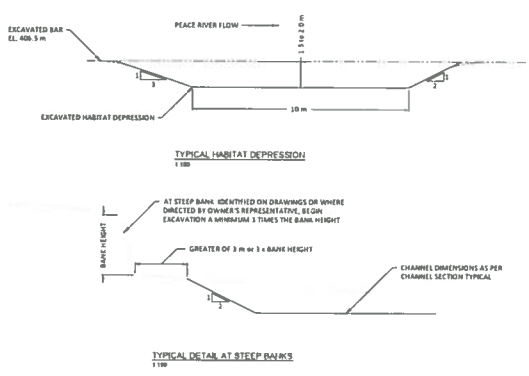
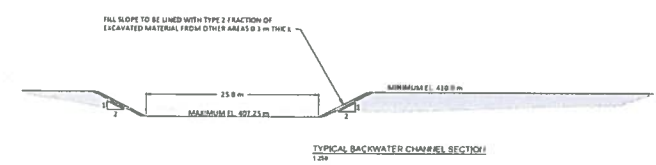
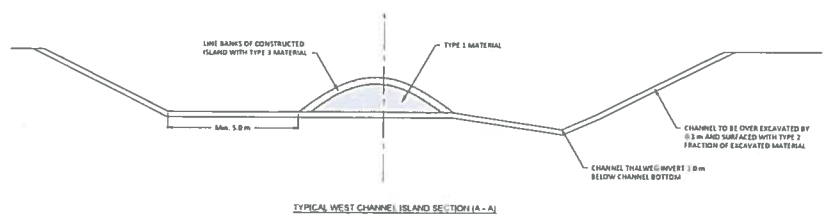
Reviewed / Examiné  
 Page 12 of 13  
 2017-50079  
 MAY 08 2017  
 By/par:   
 COLIN PARKINSON  
 Navigation Protection Program /  
 Programme de protection de la navigation



NO.	REVISIONS	DATE	DESIGNED	DRAWN	CHECKED	APPROVED
4	ISSUED FOR REVIEW	24 NOV 2015	J GLAWDEL	BMC	JEH	AMH
3	UPDATED WITH VALUE ENGINEERING (OFFICE)	25 SEPT 2015	J GLAWDEL	BMC	BAH	JEG
2	UPDATED WITH COMMENTS	11 AUG 2015	J GLAWDEL	BMC	BAH	JEG
1	UPDATED WITH COMMENTS	26 JUN 2015	J GLAWDEL	BMC	JEH	JEG
0	ISSUED FOR REVIEW	09 JUN 2015	J GLAWDEL	BMC	JEH	JEG

DESIGN	JEG	REVISED	BMC	REVISED	BAH	REVISED	BAH	REVISED	BAH	REVISED	BAH	REVISED	BAH	REVISED	BAH
PRELIMINARY NOT FOR CONSTRUCTION															
SITE C CLEAN ENERGY PROJECT GENERAL PLANT FISH HABITAT MITIGATION DOWNSTREAM - SITE 108R DETAILED DESIGN TYPICAL SECTIONS															
DATE	24 NOV 2015	DRAWN BY		SCALE		SHEET NO.	1016-L13-412	TOTAL SHEETS	AO	4					

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Reviewed / Examined

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MAY 08 2017

By/par: COLIN PARKINSON

Navigation Protection Program /  
Programme de protection de la navigation

LEGEND:

[Symbol]	TYPE 1 MATERIAL	[Symbol]	EXISTING GROUND
[Symbol]	TYPE 2 MATERIAL	[Symbol]	CHANNEL THALWEG
[Symbol]	TYPE 3 MATERIAL	[Symbol]	SHOULDER

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REF#	DRAWING NUMBER	TITLE	REF#	DRAWING NUMBER	TITLE
		REFERENCE DRAWINGS			REFERENCE DRAWINGS

NO.	REVISIONS	DATE	DESIGNED	CHECKED	IN CHARGE	APP. REV.	REV.	DATE
4	ISSUED FOR REVIEW	24 NOV 2015	J. GLAWDEL	BKAC	LEH	AAB		
3	UPDATED WITH VALVE ENGINEERING OPTIONS	23 SEPT 2015	J. GLAWDEL	BKAC	BKH	JEG		
2	UPDATED WITH COMMENTS	11 AUG 2015	J. GLAWDEL	BKAC	BKH	JEG		
1	ISSUED FOR REVIEW	09 JUN 2015	J. GLAWDEL	BKAC	KEH	JEG		

		<b>PRELIMINARY NOT FOR CONSTRUCTION</b>	
SITE C CLEAN ENERGY PROJECT GENERAL PLANT DOWNSTREAM FISH HABITAT MITIGATION DOWNSTREAM - SITE 108R DETAILED DESIGN TYPICAL SECTIONS		DATE: 24 NOV 2015 DRAWING NO: 1016-L13-413 SHEET: A0 4	

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