

FISHERIES AND OCEANS

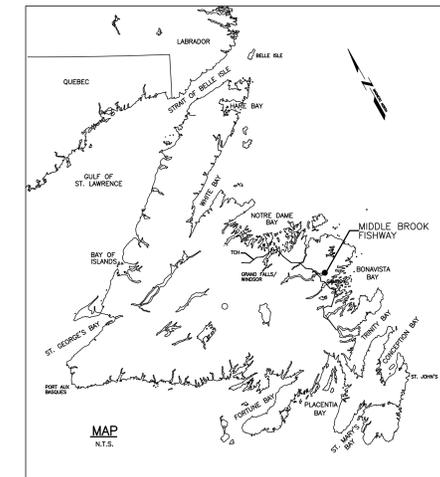
MIDDLE BROOK FISHWAY

IMPROVEMENTS AND UPGRADES

GAMBO, NEWFOUNDLAND AND LABRADOR

PROJECT No. F6879-159020

ISSUED FOR TENDER



DATE: MARCH 2016

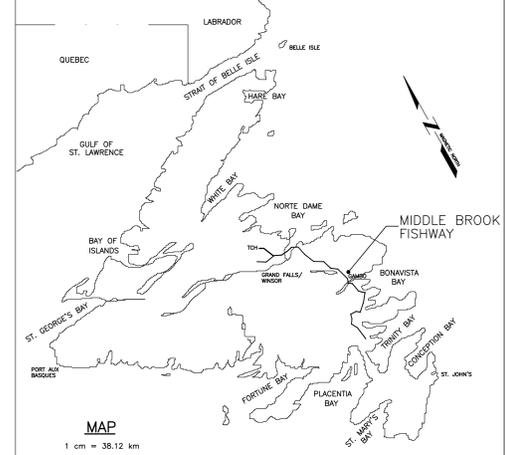
CLIENT/OWNER:
DEPARTMENT OF FISHERIES & OCEANS,
NEWFOUNDLAND REGION

PRIME CONSULTANTS:
EXPLOITS ENGINEERING CONSULTANTS LTD.

LIST OF DRAWINGS:

- S1 EXISTING CONDITIONS/DEMOLITION PLAN
- S2 REPAIR PLAN
- S3 DETAILS

NOTES:
 1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
 2. CONTRACTOR TO PREPARE ALL CONCRETE CRACKS IN FISHWAY IN ACCORDANCE WITH THE REPAIR PRODUCT MANUFACTURER'S INSTRUCTIONS.

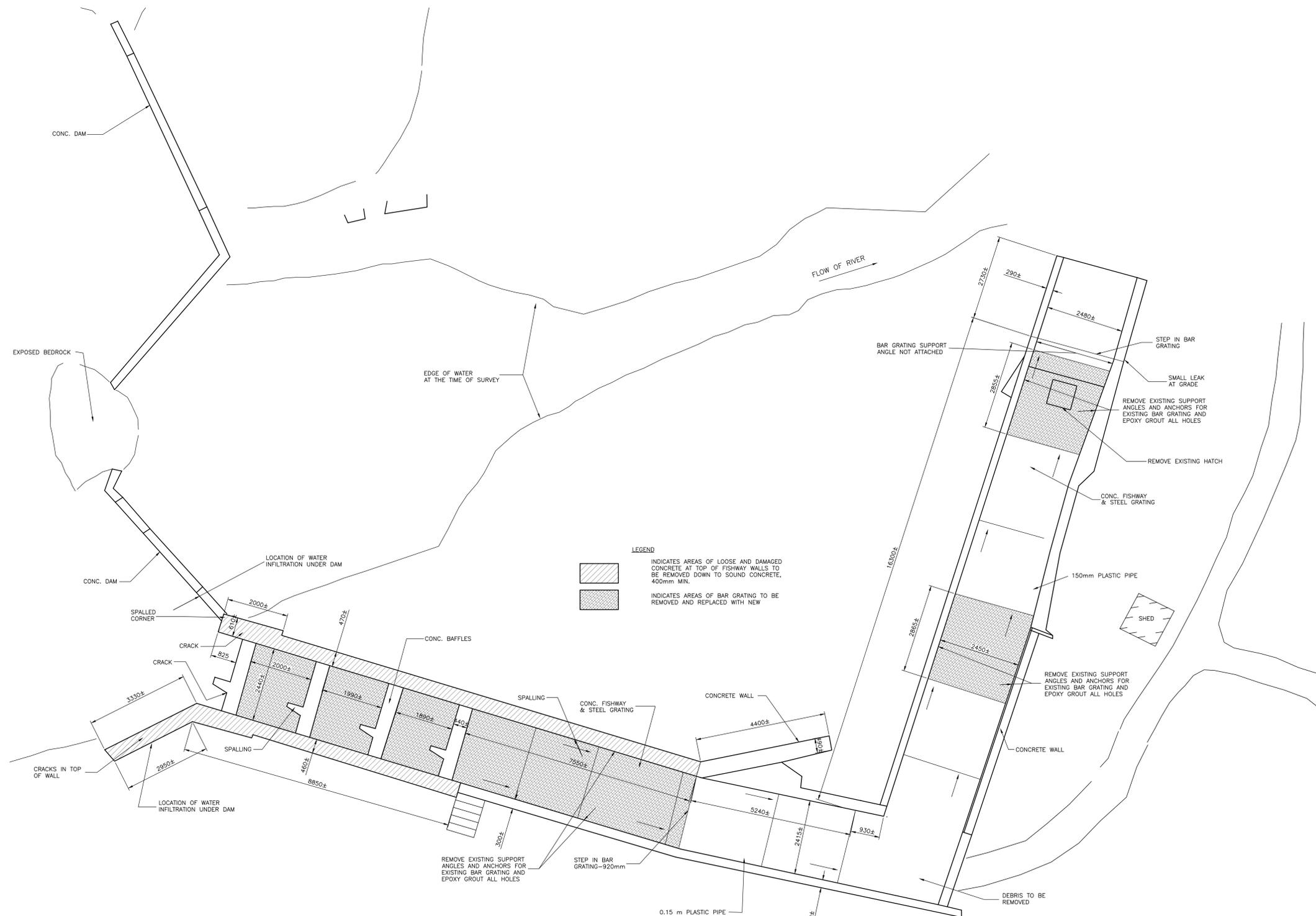


KEY LOCATION PLAN

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EXISTING CONDITIONS/DEMOLITION PLAN
 SCALE 1:50

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Project - projet

MIDDLE BROOK FISHWAY IMPROVEMENTS AND UPGRADES

Drawing - dessin

EXISTING CONDITIONS/DEMOLITION PLAN

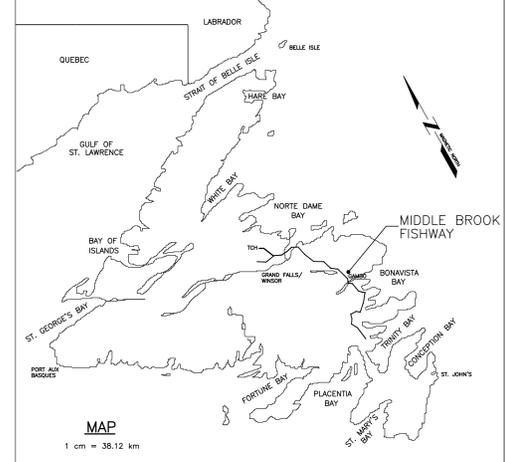
drawn - dessiné	WH	designed - dessinée par	RK/CS
date - date	MARCH 2016	checked - vérifié	
scale - échelle	AS SHOWN	approved - approuvé	
project no. - projet no.	F6879-159020	drawing no. - no du dessin	02D1601A00251
		sheet - feuille	S1

CONCRETE REPAIR SCHEDULE			
REPAIR TYPE	PRODUCT	METHOD	DESCRIPTION
TYPE 'A'	SIKADUR 52	INJECTION	HAIRLINE CRACKS w/ ACCESS TO BOTH SIDES
TYPE 'B'	SIKADUR 673	INJECTION	UP TO 6mm CRACKS w/ NO ACCESS TO BACK SIDE
TYPE 'C'	SIKADUR 122 PLUS	HORIZONTAL TROWEL	SHALLOW SPALLS/REPAIRS
TYPE 'D'	SIKADUR 123 PLUS	VERTICAL/OVERHEAD TROWEL	SHALLOW SPALLS/REPAIRS
TYPE 'E'	SIKACRETE 08-SCC	POUR	ONE-SIDED FORM AND POUR APPLICATIONS
TYPE 'F'	CONCRETE	POUR	NEW CONCRETE AGAINST EXISTING CONCRETE

NOTES:

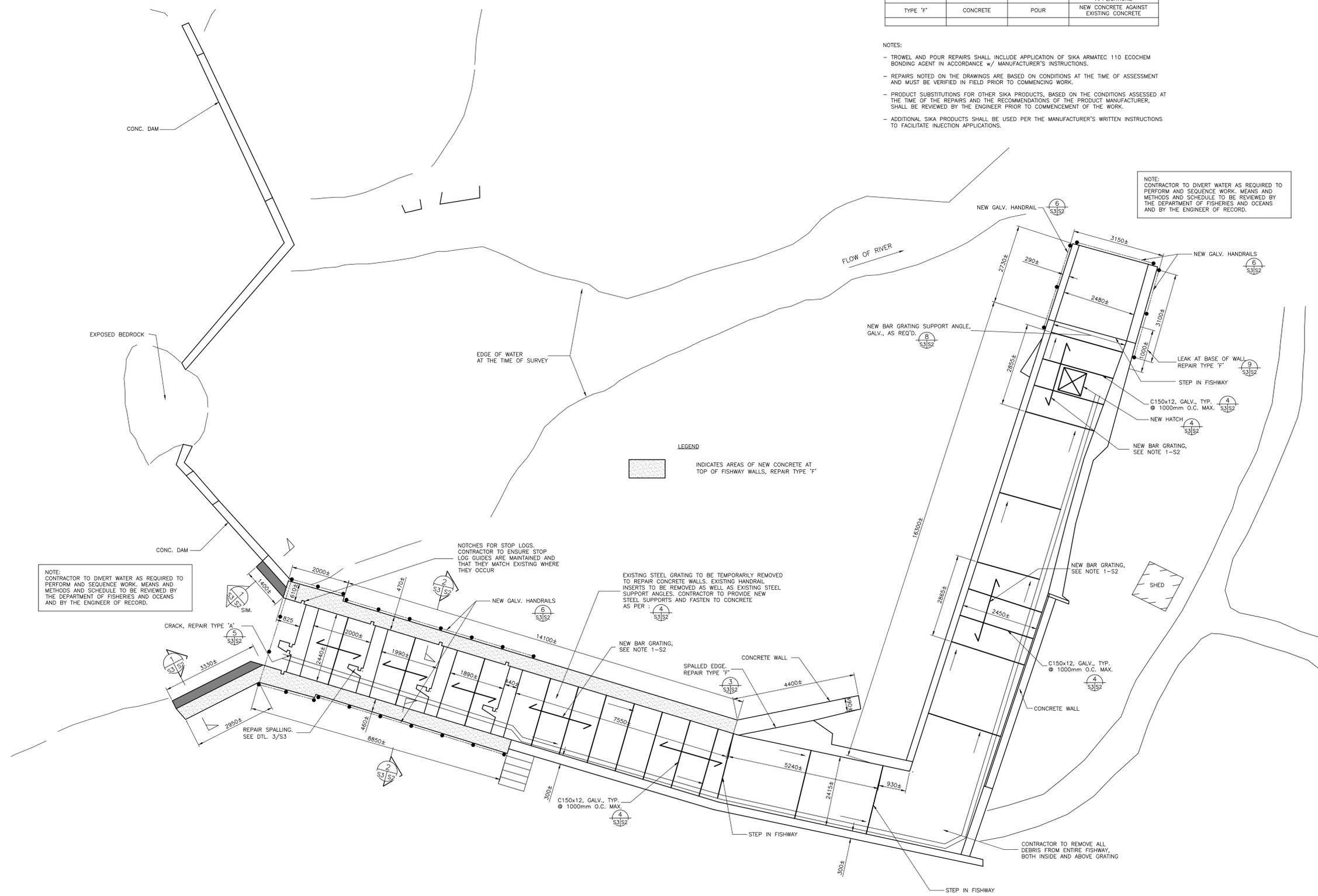
- TROWEL AND POUR REPAIRS SHALL INCLUDE APPLICATION OF SIKA ARMATEC 110 ECOCHEM BONDING AGENT IN ACCORDANCE w/ MANUFACTURER'S INSTRUCTIONS.
- REPAIRS NOTED ON THE DRAWINGS ARE BASED ON CONDITIONS AT THE TIME OF ASSESSMENT AND MUST BE VERIFIED IN FIELD PRIOR TO COMMENCING WORK.
- PRODUCT SUBSTITUTIONS FOR OTHER SIKA PRODUCTS, BASED ON THE CONDITIONS ASSESSED AT THE TIME OF THE REPAIRS AND THE RECOMMENDATIONS OF THE PRODUCT MANUFACTURER, SHALL BE REVIEWED BY THE ENGINEER PRIOR TO COMMENCEMENT OF THE WORK.
- ADDITIONAL SIKA PRODUCTS SHALL BE USED PER THE MANUFACTURER'S WRITTEN INSTRUCTIONS TO FACILITATE INJECTION APPLICATIONS.

NOTE: CONTRACTOR TO DIVERT WATER AS REQUIRED TO PERFORM AND SEQUENCE WORK. MEANS AND METHODS AND SCHEDULE TO BE REVIEWED BY THE DEPARTMENT OF FISHERIES AND OCEANS AND BY THE ENGINEER OF RECORD.



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REPAIR PLAN
SCALE 1:50

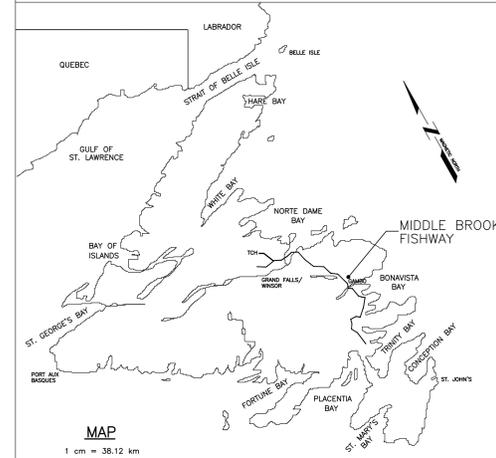
NOTES:

- 1-S2: NEW MOLDED 25mm DEEP FIBREGLASS w/ 25mmX102mm MESH, STANDARD OF ACCEPTANCE FIBREGRATE.
- 2-S2: PROVIDE 'M' STYLE HOLD DOWN CLIPS FOR BAR GRATING CONNECTION TO SUPPORTING STEEL, (3) MIN. AT EACH SUPPORT.
- 3-S2: CONTRACTOR SHALL PROVIDE 3 ADDITIONAL STANDARD SIZE SHEETS OF FIBREGLASS BAR GRATING.
- 4-S2: ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
- 5-S2: CONTRACTOR TO PREPARE ALL CONCRETE CRACKS IN FISHWAY IN ACCORDANCE WITH THE REPAIR PRODUCT MANUFACTURER'S INSTRUCTIONS.

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Project - projet
 MIDDLE BROOK FISHWAY IMPROVEMENTS AND UPGRADES

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WH	RK/CS	WH	RK/CS
Date / Date: MARCH 2016		Date / Date: MARCH 2016	
Échelle / Scale: AS SHOWN		Approuvé / Approved: AS SHOWN	
Project no. / projet no.: F6879-159020	Drawing no. / no du dessin: 02D1601A00252	Sheet / feuille: S2	

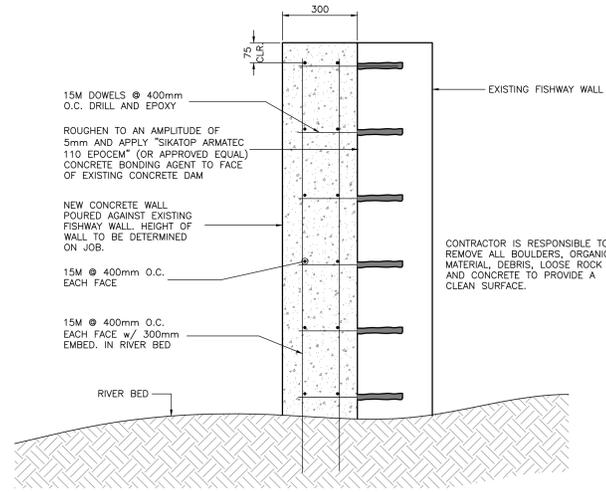


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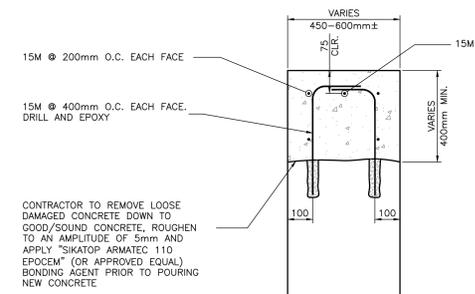
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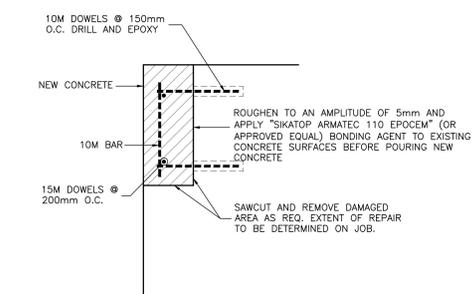
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DETAIL SCALE 1:10 1 S3/S2

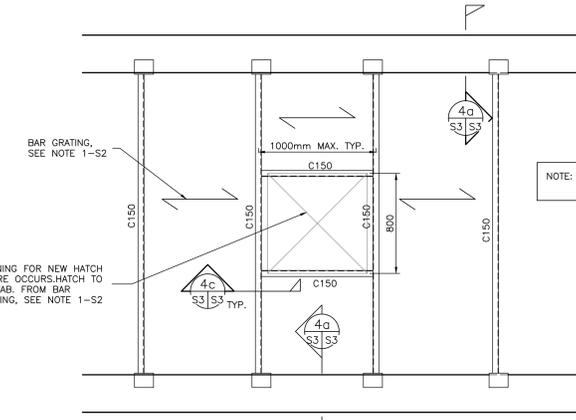


DETAIL SCALE 1:10 2 S3/S2

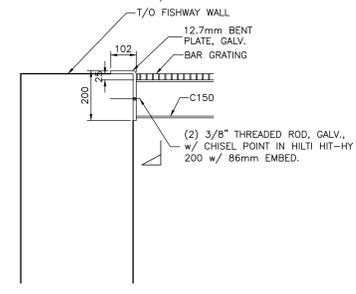


DETAIL SCALE 1:5 3 S3/S2

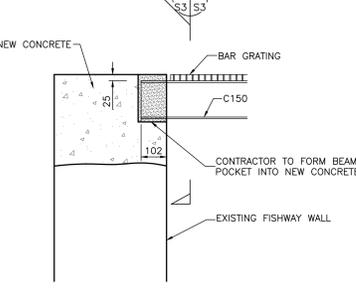
- NOTES:**
 1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
- CONCRETE NOTES:**
 1. ALL CONCRETE WORK TO CONFORM TO CAN3-A23.1 AND CAN3-A23.2 LATEST REVISIONS.
 2. CONCRETE SPECIFICATIONS
 - CONCRETE MIN. COMPRESSIVE STRENGTH @ 28 DAYS TO BE 30MPa.
 - MAX. SLUMP = 75mm
 - AIR ENTRAINMENT = 6± 1% BY VOLUME
 - ADMIXTURES TO BE APPROVED BY ENGINEER
 - AGGREGATES (MAX.)
 WALLS = 19mm
 FOOTINGS = 76mm
 3. REINFORCING STEEL TO BE DEFORMED BARS WITH 400MPa YIELD POINT CONFORMING TO CSA-G30.18.
 - LAP HORIZ. BARS 36 DIAMETERS (MIN. 12")
 - PROVIDE CORNER BARS TO MATCH HORIZONTAL REINFORCING.
 - SPLICE BARS TO CONFORM TO CAN3-A23.3-M84.
 - CONCRETE COVER TO REINFORCING:
 WALLS = 50mm
 FOOTINGS = 76mm
 4. CONTRACTOR IS RESPONSIBLE FOR PROVIDING CONCRETE MIX DESIGN STAMPED AND SIGNED BY AN ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF NL IF BATCHING CONCRETE ON SITE.
 5. CONTRACTOR TO PROVIDE 24 HOURS NOTICE OF CONCRETE POURS.
 6. CONTRACTOR IS RESPONSIBLE FOR ALL CONCRETE TESTING. CONCRETE THAT HAS NOT BEEN TESTED WILL BE REMOVED AND NEW CONCRETE INSTALLED AT THE COST OF THE CONTRACTOR.
- STEEL NOTES:**
 1. ALL STRUCTURAL STEEL TO CONFORM TO CSA G40.21 STANDARDS.
 2. WELDING TO CONFORM TO CSA W59 SPEC. LATEST REQUIREMENTS.
 3. ALL BOLTS TO CONFORM TO ASTM A325. WELDING ELECTRODES E49XX SERIES.
 4. ALL STEEL TO BE HOT DIPPED GALVANIZED.



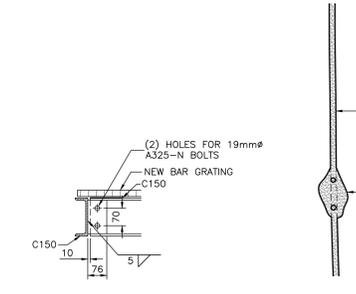
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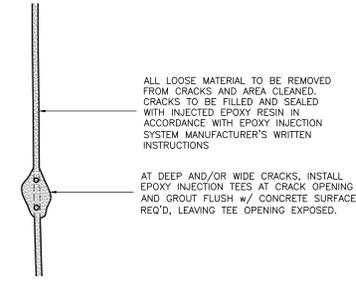
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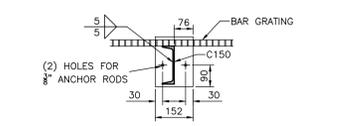
DETAIL SCALE 1:10 4b S3/S3



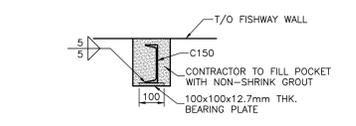
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DETAIL SCALE 1:20 5 S3/S2



DETAIL SCALE 1:10 4a S3/S3

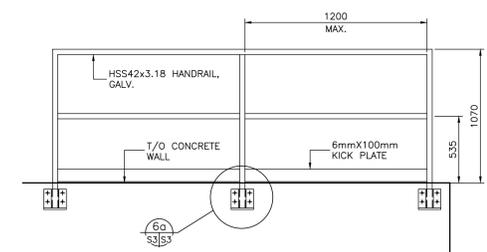


DETAIL SCALE 1:10 4b S3/S3

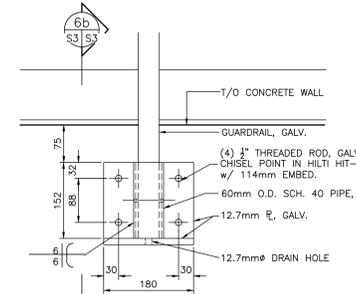
DRILL & EPOXY SCHEDULE

10M BARS	DRILL AND EPOXY w/ HILTI HIT-HY 200 w/ 115mm EMBEDMENT, U.N.O.
15M BARS	DRILL AND EPOXY w/ HILTI HIT-HY 200 w/ 145mm EMBEDMENT, U.N.O.

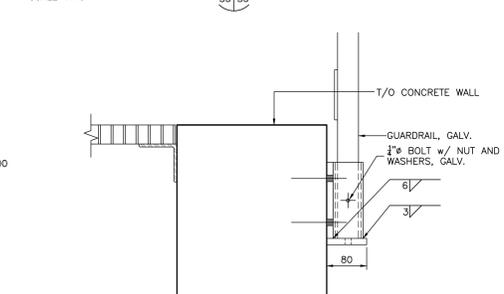
DRILL & EPOXY SCHEDULE 7 S3/S3



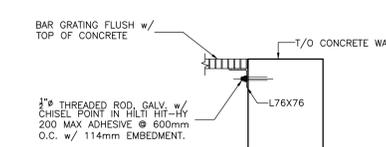
TYP. HANDRAIL DETAIL SCALE 1:20 6 S3/S2



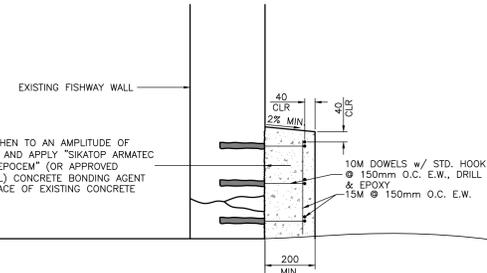
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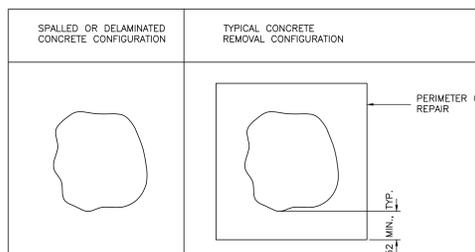
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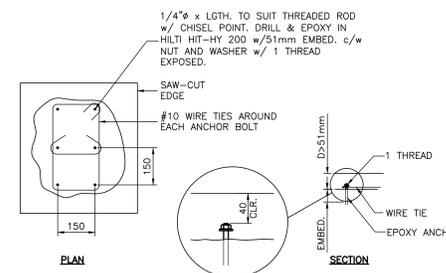
DETAIL SCALE 1:20 8 S3/S2



DETAIL SCALE 1:10 9 S3/S2



CONCRETE SURFACE REPAIR PLAN 10 S3/S3



CONCRETE SURFACE REPAIR NO EXISTING REINFORCEMENT 11 S3/S3

- CONCRETE REPAIR NOTES**
- DO NOT NICK, DAMAGE OR CUT EXISTING REINFORCING STEEL.
 - PROVIDE A UNIFORM REPAIR DEPTH.
 - ROUGHEN CONCRETE SURFACE TO AN AMPLITUDE OF 5 mm MINIMUM.
 - REMOVAL OF THE BRUISED LAYER OF CONCRETE CAUSED BY THE USE OF HIGH-IMPACT, MECHANICAL METHODS TO REMOVE DETERIORATED CONCRETE, AND BOND-INHIBITING MATERIAL SUCH AS DIRT, CONCRETE SLURRY, AND LOOSELY BONDED CONCRETE SHALL BE DONE BY OIL-FREE ABRASIVE BLASTING OR HIGH-PRESSURE WATER BLASTING.
 - ALL CONCRETE, CORROSION PRODUCTS, AND SCALE SHOULD BE REMOVED FROM THE REINFORCING STEEL BY OIL-FREE ABRASIVE BLASTING OR HIGH-PRESSURE WATER BLASTING.
 - BLAST THE SAW-CUT EDGE OF THE REPAIR AREA TO ROUGHEN THE POLISHED VERTICAL SURFACE.
 - SECURE ALL LOOSE REINFORCING STEEL IN PLACE BY TYING TO SECURE BARS OR BY OTHER MEANS TO PREVENT MOVEMENT DURING PLACEMENT OF REPAIR MATERIAL.
 - IF IMPACT BREAKERS ARE USED FOR PARTIAL DEPTH CONCRETE REMOVAL, THE BREAKER SHOULD NOT EXCEED 12 kg (30 lb) (7 kg (15 lb) BREAKER PREFERRED).
 - PROVIDE 19 mm MINIMUM CLEARANCE BETWEEN THE REINFORCING STEEL AND SURROUNDING CONCRETE, OR 6 mm LARGER THAN THE MAXIMUM SIZE COARSE AGGREGATE USED IN THE REPAIR MATERIAL, WHICHEVER IS GREATER.
 - CONCRETE REMOVAL SHOULD EXTEND ALONG THE REINFORCING STEEL UNTIL THERE IS NO FURTHER DELAMINATION OR CRACKING IN THE CONCRETE, OR SIGNIFICANT CORROSION OF THE REINFORCING STEEL, AND IT IS WELL BONDED TO THE SURROUNDING CONCRETE.

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Project - projet

MIDDLE BROOK FISHWAY IMPROVEMENTS AND UPGRADES

Drawing - dessin

DETAILS

drawn - dessine	WH	designed - dessinée par	RK/CS
date - date	MARCH 2016	checked - vérifié	
scale - échelle	AS SHOWN	approved - approuvé	

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