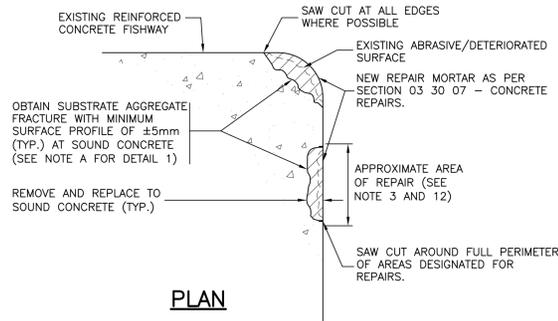
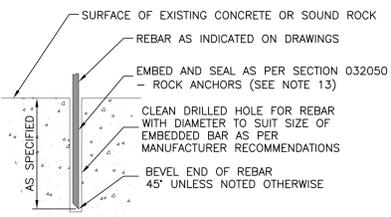
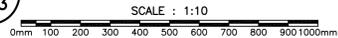


- NOTES (DETAIL 1):**
- ROUGHEN EDGES OF SAW CUTS TO FULL AMPLITUDE OF AT LEAST 5mm PRIOR TO PLACING REPAIR CONCRETE. WHERE SAW CUTTING IS NOT PRACTICAL, USE CHIPPING TOOLS TO REMOVE CONCRETE. ENSURE THAT EDGES OF REPAIR AREA ARE CUT PERPENDICULAR TO THE SURFACE.
 - REFER TO REPAIR PROCEDURES IN THE TECHNICAL SPECIFICATION UNDER SECTION 3 30 07 - CONCRETE REPAIR.
 - AVOID SHARP CORNER IN REMAINING CONCRETE.
 - GRIND DOWN ANY NEW OR EXISTING CORNERS TO A SMOOTH, ROUNDED, NON-ABRASIVE EDGE TO APPROVAL OF DEPARTMENTAL REPRESENTATIVE.

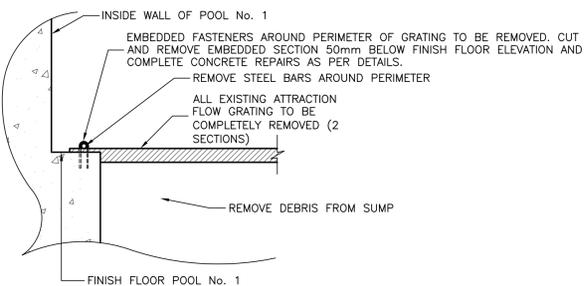
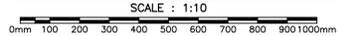


PLAN

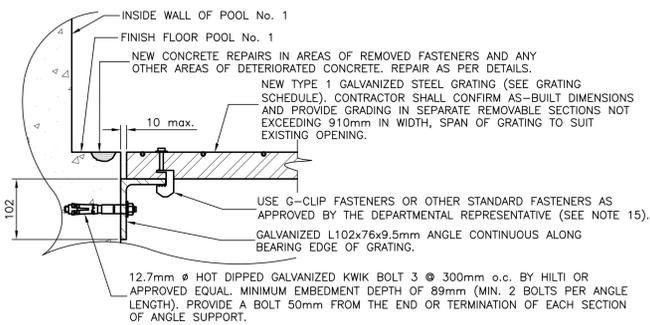
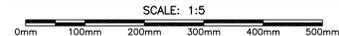
1 TYPICAL HORIZONTAL AND VERTICAL CONCRETE REPAIR DETAILS



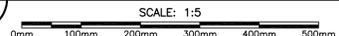
2 TYPICAL EMBEDMENT OF DRILL-AND-GROUTED REBAR



3 EXISTING ATTRACTION FLOW FLOOR GRATING REMOVAL DETAILS - POOL No. 1



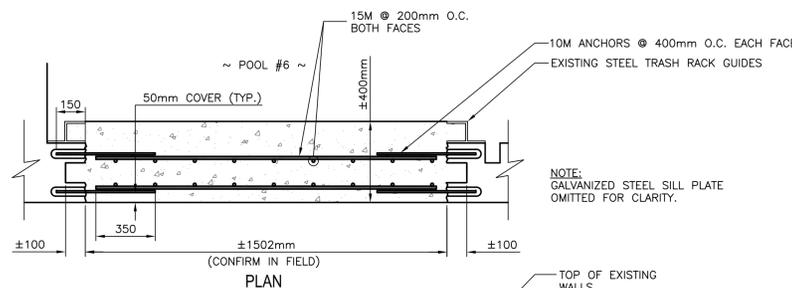
4 NEW ATTRACTION FLOW FLOOR GRATING DETAILS - POOL No. 1



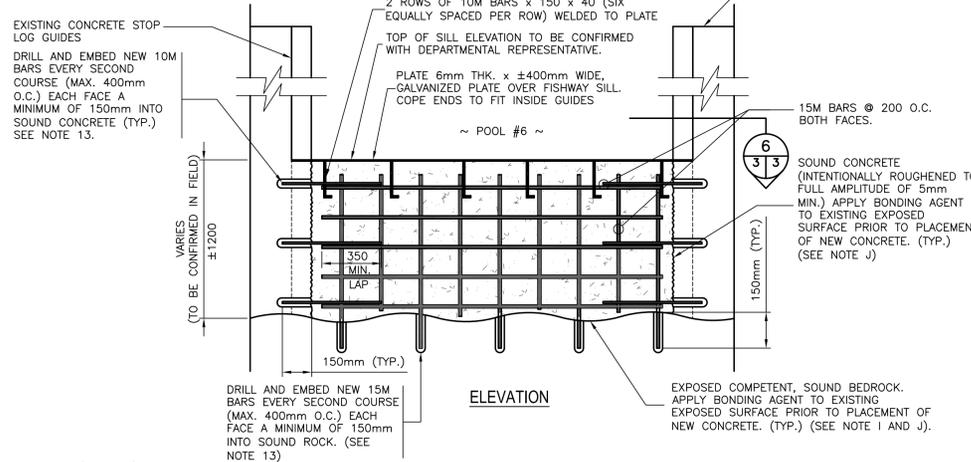
GRATING SCHEDULE			
POOL #	TYPE	DESCRIPTION	DETAILS
1	1	ATTRACTION FLOW FLOOR GRATING BORDEN TYPE W/B, NON-SERRATED EDGE, SIZE NO.11, 30mm CTRS, BEARING BAR SIZE 57x5, GALVANIZED, OR APPROVED EQUAL.	- SPAN TO SUIT EXISTING OPENING - FULLY BANDED - GALVANIZED
6	2	ATTRACTION FLOW SCREEN GRATING (VERTICAL) BORDEN TYPE E, (18-R-3.5), RIVETED GRATING, NON-SERRATED EDGE, SIZE No. 9, BEARING BAR SIZE 44.5x5, GALVANIZED OR APPROVED EQUAL	- SPAN TO SUIT EXISTING OPENING - FULLY BANDED - GALVANIZED - PANEL WIDTH (EACH) = ±840mm

GENERAL NOTES:

- DO NOT SCALE FROM DRAWINGS.
- ALL DIMENSIONS SHOWN ON DRAWINGS ARE IN MILLIMETERS. ALL ELEVATIONS AND STATIONS ARE IN METERS UNLESS NOTED OTHERWISE.
- CONCRETE REMOVAL FOR PATCH REPAIRS WILL RESULT IN THE CONTRACTOR WORKING OVER A SURFACE WITH A SIGNIFICANTLY REDUCED CAPACITY. AS SUCH, THE CONTRACTOR SHALL PHASE AND PROVIDE TEMPORARY BRACINGS AS NECESSARY TO CARRY OUT THE REPAIRS IN A SAFE MANNER. WORK METHOD TO CARRY OUT THE TEMPORARY SUPPORTS/BRACING SHALL BE SUBMITTED TO THE DEPARTMENT REPRESENTATIVE UNDER SEAL OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN NEWFOUNDLAND AND LABRADOR PRIOR TO START OF CONCRETE REPAIR WORK.
- CONTRACTOR TO VERIFY ALL CRITICAL DIMENSIONS IN THE FIELD PRIOR TO START OF WORK AND NOTIFY DEPARTMENTAL REPRESENTATIVE ON ANY DISCREPANCIES.
- MOST DIMENSIONS SHOWN FOR EXISTING COMPONENTS ARE FROM PREVIOUS SURVEYS AND HAVE NOT BEEN CONFIRMED FOR ACCURACY WITH THE CURRENT AS-BUILT CONDITIONS. REPAIRS SHALL BE COMPLETED TO MATCH EXISTING GEOMETRY. DIMENSIONS INDICATED ARE TO BE CONSIDERED APPROXIMATE. CONTRACTOR IS RESPONSIBLE TO CONFIRM ALL CRITICAL DIMENSIONS PRIOR TO THE START OF WORK AND BARE ALL COSTS RELATED TO THESE UNKNOWNNS AND ASSOCIATED RISKS ACCORDINGLY.
- PREVIOUS CONCRETE REPAIR WORK ON THIS STRUCTURE HAS NOT REVEALED ANY EXISTING REINFORCEMENT IN THE WALLS AND FLOOR. IF REINFORCEMENT IS ENCOUNTERED DURING CONCRETE REPAIRS, PLEASE NOTIFY DEPARTMENTAL REPRESENTATIVE IMMEDIATELY BEFORE PROCEEDING ANY FURTHER WITH THE REPAIR WORK. THE PRESENCE OF REINFORCING STEEL, SIZE, LOCATION, COVER, NUMBER OF MATS AND CONFIGURATION WITHIN THE EXISTING CONCRETE STRUCTURES ARE COMPLETELY UNKNOWN. THEREFORE, THE INFORMATION PROVIDED SHOULD BE USED WITH CAUTION. THE CONTRACTOR SHALL CONFIRM ALL CRITICAL INFORMATION IN THE FIELD AND MAKE ADJUSTMENTS AS DIRECTED BY THE DEPARTMENTAL REPRESENTATIVE. THE CONTRACTOR IS RESPONSIBLE TO BEAR ALL COSTS RELATED TO THESE UNKNOWNNS AND ASSOCIATED RISKS ACCORDINGLY.
- CONTRACTOR SHALL TAKE ALL AS-BUILT MEASURES FOR ITEMS WHICH REQUIRE REMOVAL AND REINSTATEMENT TO MATCH THAT OF THE EXISTING CONDITIONS.
- IF EXISTING REINFORCEMENT IS EXPOSED DURING CONCRETE REMOVAL, IT SHALL BE SECURED AS NECESSARY. CARE AND CAUTION SHALL BE TAKEN DURING THE REMOVAL OF CONCRETE AS NOT TO DAMAGE THE EXISTING REINFORCEMENT AND INSERTS. IN AREAS WHERE THE EXISTING REINFORCEMENT IS CORRODED (LESS THAN 15% REDUCTION IN CROSS-SECTION), THE SURROUNDING CONCRETE SHALL BE ADDITIONAL REMOVED BEYOND THE BAR 25mm. CONTINUE TO EXPOSE REINFORCING STEEL ALONG THE LENGTH UNTIL AT LEAST 50mm OF SOUND RUST-FREE MATERIAL IS EXPOSED. IN ANY AREAS WHERE CORROSION OF REBAR HAS RESULTED IN GREATER THAN 15% LOSS OF SECTION, OR THE REBAR IS DAMAGED BEYOND SALVAGE (AS DETERMINED BY THE DEPARTMENTAL REPRESENTATIVE), A BAR OF SAME TYPE AND AREA SHALL BE SPLICED TO SOUND STEEL AND EXTEND OVER FULL AREA OF CORROSION OR DAMAGE AND CONCRETE REMOVED AS REQUIRED TO COMPLETE THIS WORK. THE CONTRACTOR IS RESPONSIBLE FOR ALL FIELD MEASUREMENTS NECESSARY TO HAVE SHOP FABRICATED REINFORCING BARS BENT AND CUT TO SUIT THE REQUIRED LOCATIONS. ALL EXPOSED REINFORCEMENT DESIGNATED TO REMAIN SHALL BE CLEANED TO SSPC-SP6, COMMERCIAL BLAST CLEAN.
- ALL NEW REINFORCING STEEL SHALL BE UNCOATED.
- UNLESS NOTED OTHERWISE; REINFORCING STEEL TO BE SPLICED AS FOLLOWS:
 - ALL SPLICES TO BE TENSION LAP SPLICES. CLASS "B"
 - NO MORE THAN 50% OF THE REINFORCING STEEL TO BE SPLICED AT ANY GIVEN LOCATION.
- CONCRETE PROTECTIVE COVERING FOR NEW REINFORCING STEEL SHALL BE 75±12 OR AS NOTED ON THE DRAWINGS. THESE COVER REQUIREMENTS MAYBE SUBJECT TO CHANGE BY DEPARTMENTAL REPRESENTATIVE IN AREAS WHERE EXISTING REINFORCEMENT IS TO REMAIN IN PLACE AND NEW REINFORCEMENT IS TO BE INTO EXISTING.
- SECTIONS OF DETEIORATED CONCRETE ON THE EXISTING FISHWAY THAT NECESSITATES REPAIRS SHALL BE DETERMINED ON SITE WITH THE CONTRACTOR AND DEPARTMENTAL REPRESENTATIVE ONCE THE FISHWAY POOLS ARE DEWATERED AND ACCESSIBLE FOR INSPECTION. BOTH CONTRACTOR AND DEPARTMENTAL REPRESENTATIVE SHALL SIGN OFF ON THE AGREED AREAS NECESSITATING A PATCH. THE AMOUNT OF PATCH REPAIRS TO BE UNDERTAKEN SHALL BE WITHIN THE ALLOCATED QUANTITY STIPULATED IN THE UNIT PRICE TABLE UNLESS WRITTEN AUTHORIZATION FROM THE DEPARTMENTAL REPRESENTATIVE APPROVES OTHERWISE.
- IN DRY CONDITIONS ROCK ANCHORS (BILLET STEEL) CAN BE SECURED INTO EXISTING ROCK OR CONCRETE WITH A PRE-MIXED PORTLAND CEMENT GROUT MIXTURE AS PER SECTION 032050 - ROCK ANCHORS. IN UNDERWATER CONDITIONS ROCK ANCHORS CAN BE SECURED WITH HIT RE 500 EPOXY ADHESIVE BY HILTI OR APPROVED EQUAL.
- ALLOW FOR 10mm CLEARANCE BETWEEN TRASH RACK AND EXISTING VERTICAL CONCRETE GUIDES TO PREVENT BINDING DURING INSERTION AND REMOVAL OF TRASH RACK.
- G-CLIP FASTENINGS (OR OTHERS AS APPROVED BY THE DEPARTMENTAL REPRESENTATIVE) TO BE INSTALLED AT START AND END OF EACH GRATING PANEL AND INSTALLED AT 450mm O.C. AT INTERMEDIATE LOCATIONS. ALL FIELD WORK TO BE RE-GALVANIZED ON SITE.



PLAN

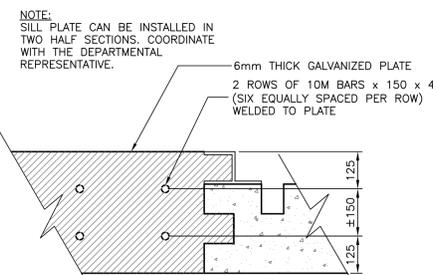


ELEVATION

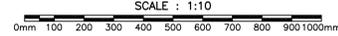
NOTES: (DETAIL 5)

- THE EXISTING STEEL SILL SHALL BE REMOVED AND REBUILT WITH A NEW REINFORCED CONCRETE SILL. CONTRACTOR SHALL VERIFY AND CONFIRM ALL EXISTING DIMENSIONS AND NOTIFY THE DEPARTMENTAL REPRESENTATIVE OF ANY DISCREPANCIES IN DIMENSIONS PROVIDED WITH THOSE CONFIRMED.
- EXPOSED SURFACES OF SOUND CONCRETE SHALL BE PREPARED TO RECEIVE NEW CONCRETE AS PER THE PROCEDURES INDICATED IN THE CONTRACT DOCUMENTS. NEW REINFORCING STEEL TO BE IN ACCORDANCE WITH SECTION 03 20 00 - CONCRETE REINFORCING. SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH SECTION 01 33 00 - SUBMITTAL PROCEDURES.
- CAST-IN-PLACE CONCRETE, EMBEDMENT MATERIAL AND BONDING AGENT TO BE PROVIDED IN ACCORDANCE WITH SECTION 03 30 07 - CONCRETE REPAIRS AND SECTION 032050 - ROCK ANCHORS. SUBMIT ALL SHOP DRAWINGS IN ACCORDANCE WITH SECTION 01 33 00 - SUBMITTAL PROCEDURE. CONCRETE TO BE FINISHED WITH A SMOOTH NON-ABRASIVE SURFACE WITH SMOOTH ROUNDED EDGES.
- FORMWORK AND FALSE WORK TO BE PROVIDED IN ACCORDANCE WITH SECTION 03 10 00 - CONCRETE FORMING AND ACCESSORIES.
- COMPLETE ALL WORK IN STRICT ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- IF NECESSARY, COMPLETE CONCRETE REPAIRS AS PER THE REPAIR PROCEDURES.
- ALL DIMENSIONS ARE IN MILLIMETERS.
- DO NOT SCALE FROM THE DRAWINGS.
- REMOVE LOOSE AND FRACTURED ROCK TO EXPOSE A SOUND COMPETENT BEDROCK LAYER TO ACCEPTANCE OF THE DEPARTMENTAL REPRESENTATIVE PRIOR TO THE PLACEMENT OF CONCRETE ON ROCK.
- APPLY BONDING AGENT "WELDCRETE" OR APPROVED EQUAL TO ALL CONCRETE TO CONCRETE AND CONCRETE TO ROCK SURFACES.

5 CONCRETE SILL - POOL No. 6



6 PARTIAL PLAN OF STEEL SILL PLATE



Public Works and Government Services Canada / Travaux Publics et Services gouvernementaux Canada

PROVINCE OF NEWFOUNDLAND AND LABRADOR

PERMIT HOLDER

This Permit Allows

Meridian Engineering Inc.

Member No. 04378

To practice Professional Engineering in Newfoundland and Labrador.

Permit No. as issued by PEG, N0453 which is valid for the year 2016.

REGISTERED PROFESSIONAL ENGINEER

PEG

Lee M. Bennett

16/08/31

NEWFOUNDLAND & LABRADOR

B	ISSUED FOR TENDER	16/08/15
A	ISSUED FOR 99% REVIEW	16/08/15
revisions		date
project		project
BISHOP'S FALLS FISHWAY UPGRADES PHASE 2		
drawing		design
DETAILS - SHEET 1		
designed	L. BENNETT	conçu
date	AUG, 2016	
drawn	R. SNOW	dessiné
date	AUG, 2016	
approved		approuvé
date		
Tender	Sourmission	
Sary MacSillivray	Sept. 2, 2016	
PWSC Project Manager	Administrateur de projets TPSC	
project number	no. du projet	
R.075582.004		
drawing no.		no. du dessin
C03		