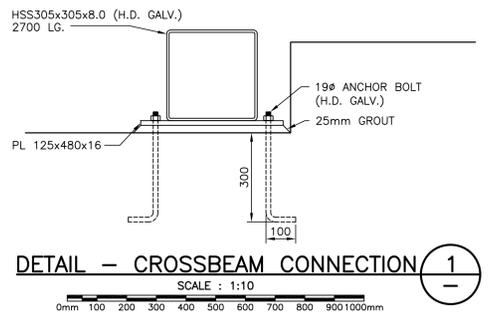
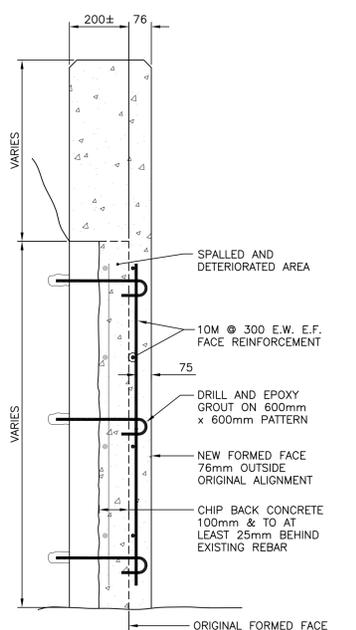


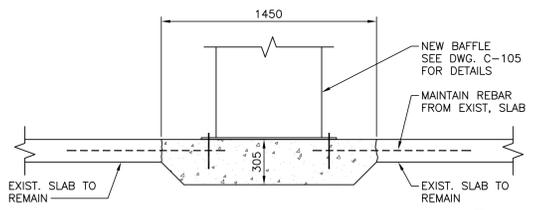
**PLAN — FISH LADDER**  
SCALE : 1:100



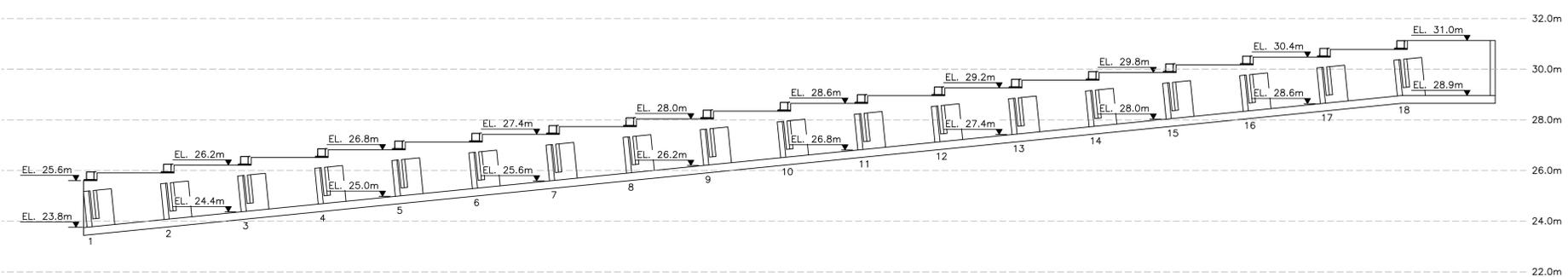
**DETAIL — CROSSBEAM CONNECTION 1**  
SCALE : 1:10



**DETAIL — TYP. REPAIR 2**  
SCALE : 1:10



**DETAIL — TYP. BAFFLE FOOTING 3**  
SCALE : 1:20



**PROFILE — FISH LADDER**  
SCALE : 1:100

- GENERAL NOTES**
- ALL DIMENSIONS ON THE DRAWINGS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
  - ALL ELEVATIONS ARE IN METRES REFERENCED TO SITE DATUM.
  - THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS AND CHECK DIMENSIONS AND ELEVATIONS AGAINST SITE CONDITIONS AND REPORT ANY DISCREPANCIES TO THE DEPARTMENTAL REPRESENTATIVE BEFORE PROCEEDING WITH THE WORK.
  - THE CONTRACTOR SHALL CARRY OUT A DETAILED AS-FOUND SURVEY OF THE EXISTING FISHWAY THAT WILL BE USED AS THE INITIAL SURVEY AND WHICH WILL BE USED TO CALCULATE THE VOLUME OF ACTUAL CONCRETE REMOVED FROM THE EXISTING STRUCTURE. A POST-CONCRETE REMOVAL SURVEY SHALL ALSO BE CARRIED OUT. THE CONTRACTOR SHALL PROVIDE THE PRE-CONSTRUCTION SURVEY AND POST-CONCRETE REMOVAL SURVEY RESULTS ALONG WITH THE ESTIMATED CONCRETE VOLUME REMOVED TO THE DEPARTMENTAL REPRESENTATIVE WITHIN 24 HOURS OF COMPLETING THE SURVEYS.
  - THE CONTRACTOR SHALL PREPARE A SITE SPECIFIC HEALTH AND SAFETY PLAN TO ADDRESS ALL RISKS ON THE SITE INCLUDING BUT NOT LIMITED TO; DEMOLITION AND REMOVAL; OVERHEAD LIFTING; ROCK REMOVAL; ROCK FALL PROTECTION, FALL PROTECTION; WORKING IN AND AROUND THE WATER; ETC.
  - ALL METHODS, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE NBCC 2010 AND ALL REFERENCED CODES AND STANDARDS.
  - THE CONTRACTOR SHALL INSTALL ALL REQUIRED IN-STREAM, TEMPORARY WATER CONTROL / COFFERDAMS / DIVERSION STRUCTURES AT THE UPSTREAM END OF THE FISHWAY AND AT THE OUTLET END OF THE FISHWAY AS REQUIRED TO CONTROL WATER AND TO ALLOW CONSTRUCTION TO PROCEED UNIMPEDED. PROVIDE DEWATERING OF THE WORK AREA AS REQUIRED.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING ALL REQUIRED REPAIRS OF DAMAGE TO THE CONSTRUCTION SITE ADJACENT FALLS, THE ACCESS ROAD AND CONTRACTOR STAGING AREA AS THE RESULT OF ITS CONSTRUCTION ACTIVITIES, ALL AT THE CONTRACTOR'S COST AND TO THE FULL SATISFACTION OF THE DEPARTMENTAL REPRESENTATIVE.
  - WORK CANNOT BE PERFORMED ON OR AFTER MARCH 31ST 2017 TO ALLOW FOR THE SPawning OF ATLANTIC SALMON, BROOK TROUT, AND GASPÉREAU.

- DEMOLITION**
- IT IS A REQUIREMENT THAT SELECTIVE DEMOLITION AND REMOVAL BE CARRIED OUT ON THE FISHWAY WALLS AND THAT THE FISHWAY BAFFLES AND FOOTING SLABS BE 100% TOTALLY DEMOLISHED AND DISPOSED OFF SITE.
  - THE DEMOLITION SHALL BE CARRIED OUT IN INCREMENTAL STAGES ONLY SUFFICIENTLY TO ALLOW UNINTERRUPTED PROGRESS FOR THE RECONSTRUCTION OF THE FISHWAY ETC. IT IS NOT PERMITTED TO ADVANCE THE DEMOLITION WORK BEYOND REASONABLE LIMITS WITHOUT THE AGREEMENT OF THE DEPARTMENTAL REPRESENTATIVE.
  - DO NOT ALLOW ANY MATERIALS TO FALL INTO THE STREAM. PROMPTLY REMOVE MATERIAL WHICH ENTERS THE STREAM.
  - THE EXISTING ATTRACTION WATER PIPELINE AND SUPPORT CRADLES SHALL BE REMOVED AND DISPOSED OFF SITE. ANY RESULTING HOLES SHALL BE FILLED WITH GENERAL PURPOSE PRE-BLENDED AND PRE-PACKAGED NON-SHRINKING GROUT.
  - THE EXISTING GRATING IN POOL #1 SHALL BE REMOVED AND THE OPENINGS SHALL BE FILLED WITH 35 MPa CONCRETE.
  - THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR REMOVAL OF ALL WASTE, RUBBISH, DEBRIS, BOULDERS, DEMOLISHED MATERIALS, CONSTRUCTION MATERIALS, ETC. FROM THE SITE AND FOR DISPOSAL OFF SITE IN AN ENVIRONMENTALLY ACCEPTABLE MANNER.

- CONCRETE REPAIR NOTES**
- ALL CONCRETE SURFACES DESIGNATED FOR REPAIR SHALL BE SOUNDED FOR LOOSE, SPALLED, OR DETERIORATED CONCRETE AND MARKED IN THE FIELD WITH ORANGE PAINT. IN ADDITION TO REMOVING DELAMINATIONS, ETC., THE INTENTION IS TO CHIP-BACK THE ENTIRE FACE OF FISHWAY AND DIVERSION WALLS TO A MINIMUM OF 25 MM BEHIND THE EXISTING REBAR. ADDITIONAL REMOVALS BEYOND THIS MAY BE REQUIRED TO REMOVE DELAMINATED, SPALLED OR UNSUITABLE CONCRETE.
  - ALL LOOSE, SPALLED AND/OR DETERIORATED CONCRETE SHALL BE REMOVED. REMOVE CONCRETE DOWN TO SOUND CONCRETE AND TO A MINIMUM DEPTH OF 25 MM BEHIND OR BELOW THE EXISTING REINFORCING STEEL.
  - CLEAN AND PREPARE ALL EXPOSED REBAR AND CONCRETE TO REMOVE ALL DIRT, RUST, AND BOND INHIBITING MATERIAL. CREATE A ± 3MM PROFILE ON ALL CONCRETE SURFACES TO BE REPAIRED. THOROUGHLY CLEAN REBAR AND REPAIR AREAS WITH HIGH PRESSURE AIR STREAM BEFORE APPLYING BONDING AGENT.
  - DRILL AND GROUT REBAR DOWELS AS INDICATED.
  - PLACE NEW MAT OF REINFORCING STEEL.
  - APPLY SPECIFIED BONDING AGENT TO ALL SURFACES OF REBAR AND CONCRETE IN REPAIR AREA IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS. SURFACE OF CONCRETE SHALL BE SATURATED SURFACE DRY PRIOR TO APPLICATION OF BONDING AGENT.
  - FORM NEW FACE OF WALLS AS NOTED ON DRAWINGS.
  - POUR CONCRETE WITH FOLLOWING PROPERTIES:

- DIVERSION WALL**
- MINIMUM COMPRESSIVE STRENGTH: 35 MPa AT 28 DAYS
  - AIR CONTENT: TO CSA A23.2-14, 6 TO 9%
  - SLUMP: TO CSA A23.2-14, BY USE OF SUPERPLASTICIZER 180 +/- 30 MM
  - MAXIMUM WATER / CEMENTING MATERIALS RATIO: 0.4
  - 10 MM MAXIMUM COARSE AGGREGATE SIZE IN ACCORDANCE WITH CSA A23.1-14

- GUIDE WALLS**
- MINIMUM COMPRESSIVE STRENGTH: 35 MPa AT 28 DAYS
  - AIR CONTENT: TO CSA A23.2-14, 5-8%
  - SLUMP: TO CSA A23.1-18, BY USE OF SUPERPLASTICIZER, 125 +/- 25 MM
  - MAXIMUM WATER / CEMENTING MATERIALS RATIO: 0.4
  - 20 MM MAXIMUM COARSE AGGREGATE SIZE IN ACCORDANCE WITH CSA A23.1-14

- CONCRETE MIXES TO BE DESIGNED TO PREVENT EXCESSIVE EXPANSION DUE TO ALKALI AGGREGATE REACTIVITY
- ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH CSA A23.1-14.
- ALL REBAR SHALL BE IN ACCORDANCE WITH CAN/CSA G30.18-02 AND CSA A23.1-14.
- GROUT FOR BASE PLATES SHALL BE PRE-BLENDED, PRE-BAGGED GENERAL PURPOSE NON-SHRINKING GROUT WITH MINIMUM 50 MPa 28 DAY STRENGTH.

- STEEL FABRICATIONS**
- EIGHTEEN (18) VERTICAL SLOT BAFFLES SHALL BE FABRICATED AND INSTALLED COMPLETE WITH NITRILE RUBBER PAD AT THE FOOTING SLAB AND WALLS AND STAINLESS STEEL CONCRETE ADHESIVE ANCHORS
  - ALL BAFFLES SHALL BE FABRICATED FROM STEEL SHEET CONFORMING TO CSA G40.21 - 300 W.
  - ALL WELDS SHALL BE FULL PENETRATION AND SHALL BE CONTINUOUS.
  - BAFFLES AND HORIZONTAL SUPPORT BEAMS, PLATES, ETC. SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
  - PROTECT GALVANIZED ELEMENTS FROM DAMAGE, DENTS AND SCRATCHES. REPAIR DAMAGE TO DEPARTMENTAL REPRESENTATIVE'S SATISFACTION. SCRATCHES SHALL BE REPAIRED WITH THREE COATS OF A COLD SPRAY-ON ZINC GALVANIZING.



1	ISSUED FOR TENDER	8/24/2016
0	ISSUED FOR TENDER	8/15/2016
revisions		date

**INDIAN FALLS FISHWAY RECONSTRUCTION**

**FISHWAY PLAN, PROFILE, & DETAILS**

designed M. DEVEAU	conçu
date AUGUST 24, 2016	
drawn N. SLACK	dessiné
date AUGUST 24, 2016	
approved E. SURETTE	approuvé
date AUGUST 24, 2016	
Tender	Soumission

PWSC Project Manager	Administrateur de projets TPSCG
project number	no. du projet
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<b>C-104</b>	