STRUCTURAL NOTES

GENERAL

1. ALL CONSTRUCTION IS TO CONFORM TO THE BRITISH COLUMBIA BUILDING CODE (2012).
2. ALL REFERENCES TO STANDARDS NOTED ON THESE DRAWINGS REFER TO THE LATEST REVISED ISSUE.
3. THESE DRAWING PREPARED BY McELHANNEY CONSULTING SERVICES LTD. (McELHANNEY) ARE INTENDED FOR STRUCTURAL REQUIREMENTS OF THIS PROJECT ONLY. ALL OTHER ASPECTS ASSOCIATED WITH THIS PROJECT WHICH INCLUDE, BUT ARE NOT LIMITED TO, ARCHITECTURAL, HYDROLOGY, ENVIRONMENTAL, CIVIL, GEOTECHNICAL, MECHANICAL, ELECTRICAL, OCCUPANT SAFETY, ACCESSIBILITY AND BUILDING ENVELOPE ARE TO BE DESIGNED, SPECIFIED AND APPROVED BY OTHERS AND ARE CONSIDERED BEYOND McELHANNEY SCOPE OF WORK
4. STRUCTURAL ELEMENTS PRESENTED ON THESE DRAWINGS ARE FOR PERMANENT STRUCTURE AND FOUNDATIONS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY AND CONSTRUCTION BRACING AND SUPPORT INCLUDING GEOTECHNICAL REQUIREMENTS UNTIL THE PROJECT IS COMPLETED.
5. REFER TO GENERAL ARRANGEMENT, ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR DIMENSIONS, GRADES, ELEVATIONS AND FOR DIMENSIONS AND LOCATIONS OF RECESSES, SLEEVES, EQUIPMENT, SHAFTS, INSERTS, CHAMFERS, ETC.. DIMENSIONS AND ELEVATIONS SHOWN ON STRUCTURAL DRAWINGS ARE FOR REFERENCE ONLY AND MUST BE CONFIRMED WITH GENERAL ARRANGEMENT DRAWINGS AND/OR SITE CONDITIONS PRIOR TO CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS TO BE CONFIRMED AND CORRELATED AT THE JOB SITE, FOR INFORMATION THAT PERTAINS SOLELY TO FABRICATION PROCESSES OR TO TECHNIQUES OF CONSTRUCTION AND INSTALLATION AND FOR COORDINATION OF THE WORK OF ALL SUB-TRADES.

REFERENCED DRAWINGS

1. LAYOUT AND STRUCTURAL SIZING IS BASED ON DESIGN DRAWINGS PREPARED BY AMEC FOSTER WHEELER DATED APRIL 13, 2016.
2. McELHANNEY HAS RELIED ON THE PROVIDED DRAWING SET AS ACCURATE AND TRUE. McELHANNEY IS NOT RESPONSIBLE FOR ANY ERROR/OMMISIONS ON THESE DRAWINGS AS A RESULT OF ERRORS OR SUBSEQUENT CHANGES TO THE PROVIDED DRAWING SET OR UNKNOWN SITE AND AS-BUILT CONDITIONS.
3. IF CHANGES ARE MADE TO THE LAYOUT OF THE STRUCTURE, OR SITE CONDITIONS VARY FROM ASSUMED, OR THE ASSUMED LOAD PATHS ARE ALTERED (RELOCATED ELEMENTS, ETC), THE STRUCTURAL ENGINEER SHOULD BE NOTIFIED SUCH THAT CHANGES CAN BE MADE TO THE DESIGN IF REQUIRED.

FIELD REVIEWS BY McELHANNEY CONSULTING SERVICES LTD.

1. McELHANNEY ASSUMES NO RESPONSIBILITY FOR FIELD REVIEWS OF THE CONSTRUCTION OR VERIFICATION OF THE CONSTRUCTION UNLESS EXPRESSLY RETAINED TO DO SO.
2. McELHANNEY CONSULTING SERVICES LTD. (McELHANNEY) PROVIDE FIELD REVIEWS ONLY FOR THE WORK SHOWN ON THESE DRAWINGS. FIELD REVIEWS BY McELHANNEY ARE PERIODIC AND AT THE SOLE DISCRETION OF McELHANNEY IN ORDER TO ASCERTAIN THAT THE WORK IS IN GENERAL CONFORMANCE WITH THE DESIGN DRAWINGS AND SUPPORTING DOCUMENTS.
3. FIELD REVIEWS BY McELHANNEY ARE NOT FOR THE CONTRACTORS BENEFIT NOR DOES IT MAKE McELHANNEY GUARANTORS OF THE CONTRACTOR'S WORK. IT REMAINS THE CONTRACTOR'S RESPONSIBILITY TO BUILD THE WORK IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.
4. McELHANNEY WILL NOT BE RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUB CONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
5. IF McELHANNEY IS RETAINED FOR FIELD REVIEWS THEN THE CONTRACTOR IS TO PROVIDE 24 HOUR NOTICE PRIOR TO CONCRETE POURS AND BEFORE ENCLOSING FRAMING ELEMENTS. FIELD REVIEWS ARE TO BE SCHEDULED AND TO BE CARRIED OUT DURING NORMAL BUSINESS HOURS UNLESS SPECIAL ARRANGEMENTS ARE MADE WITH McELHANNEY.

DESIGN STANDARDS:

1) DESIGN METHODOLOGY: LIMIT STATES DESIGN

2) CLIMATIC INFORMATION: ELKFORD, BC

- LOADING DESIGN CRITERIA

LIVE:	SNOW:
LL = 4.8 KPa	Ss = 3.7 KPa Sr = 0.3 KPa

CONCRETE

1. PREPARATION, PLACING AND FINISHING OF CONCRETE IS TO CONFORM TO CSA A23.1.
2. TESTING OF CONCRETE IS TO CONFORM TO CSA A23.2. THE FREQUENCY AND NUMBER OF TESTS IS NOT TO BE LESS THAN ONE STRENGTH, SLUMP AND AIR TEST FOR PANELS.
3. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE THE TESTING SCHEDULE AND TIMING WITH THE TESTING AGENCY.
4. CONCRETE PROPERTIES:

ITEM	AGG. SIZE (mm)	28 DAY STRENGTH	W/C	AIR (%)	CEMENT TYPE	EXPOSURE
PANELS	20	45 Mpa	.40	4 - 7	HS	F-2

REINFORCING

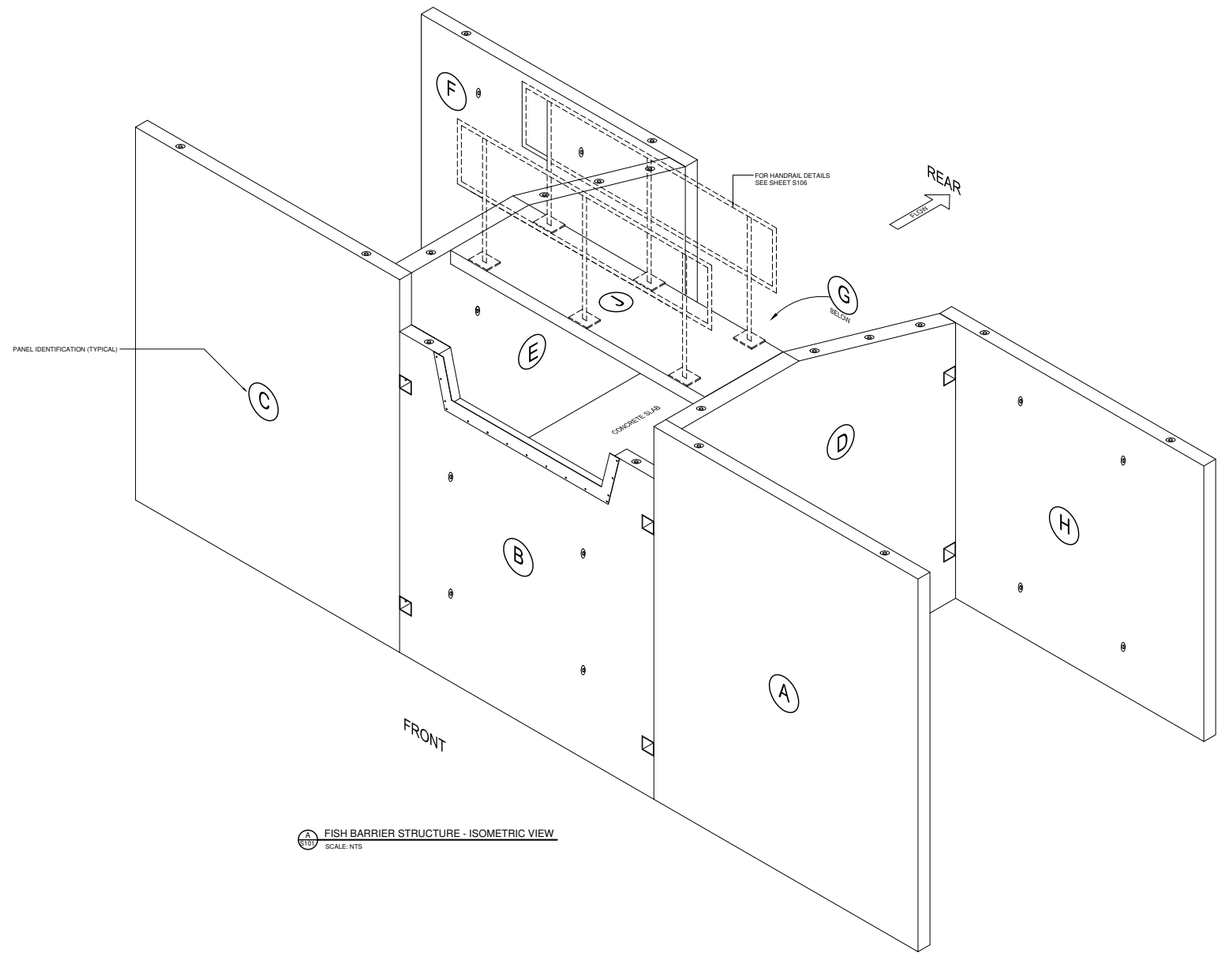
1. REINFORCING STEEL IS TO CONFORM TO CSA G30.12M - GRADE 400 MPa.
2. REINFORCING STEEL IS TO BE PLACED AS DETAILED TO 10mm TOLERANCE AND IS TO BE SUPPORTED BY METAL OR PLASTIC SUPPORTS AND/OR HANGERS IN ACCORDANCE WITH CAN/CSA A23.1
3. LAP ALL REINFORCING BAR SPLICES 32 BAR DIAMETERS MINIMUM UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
4. REINFORCING STEEL IS TO BE CLEAN, FREE OF CORROSION AND UNDAMAGED.
5. DO NOT WELD BARS OR USE HEAT TO BEND REINFORCING STEEL.
6. CONCRETE COVER OVER REINFORCEMENT IS TO SHOWN ON DRAWINGS

STRUCTURAL STEEL

1. STRUCTURAL STEEL IS TO CONFORM TO CSA G40.21 WITH THE FOLLOWING GRADES:
   - HSS SECTIONS, CLASS C : 350W
   - BARS AND PLATES : 260W OR 300W
2. SUPPLY MISCELLANEOUS ITEMS INCLUDING ALL ANCHOR BOLTS, EXPANSION BOLTS, AND OTHER MEANS OF ANCHORAGE NOT SPECIFICALLY CALLED FOR ELSEWHERE. SUPPLY ALL ANGLES, BRACKETS, CLEATS, PLATES, BEAMS, CHANNELS, NUTS, BOLTS AND OTHER ANCILLARY FASTENING NOT SPECIFIED ELSEWHERE.
3. STRUCTURAL BOLTS ARE TO CONFORM TO ASTM A325. MINIMUM 20mm DIAMETER AND CADMIUM PLATED IF EXPOSED TO WEATHER.
4. WELDING TO CONFORM TO CSA W-59 BY FABRICATORS CERTIFIED BY CANADIAN WELDING BUREAU (CWB) TO THE REQUIREMENTS OF CSA W47.1 DIVISION 1 OR 2.1.
5. PREPARE STEEL SURFACES FOR PAINTING TO SSPC-SP3 FOR ALL STEEL AND APPLY MINIMUM (1) COAT OF SHOP PRIMER (COLOR TO BE RED OR AS SPECIFIED BY OWNER).

HANDRAIL SPECIFICATION

1. USE ASTM A53 GRADE B PIPE WITH A MINIMUM YIELD OF 240 MPa.
2. WELD ALL CONNECTIONS AND GRIND ROUGH EDGES SMOOTH AFTER FABRICATION.
3. ALL STEEL COMPONENTS ARE TO BE PRIMED AND PAINTED TO THE APPROPRIATE TECK STANDARD BASED UPON ENVIRONMENT.
4. HANDRAIL SHALL BE CAPABLE OF RESISTING A 0.90 KN HORIZONTAL LOAD APPLIED AT ANY POINT.
5. WELDING TO CONFORM TO CSA W-59 BY FABRICATORS CERTIFIED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA W47.1. DIVISION 1 OR 2.1.
6. DO NOT USE HANDRAIL FOR FALL ARREST TIE OFF.



A (S101) FISH BARRIER STRUCTURE - ISOMETRIC VIEW
SCALE: NTS

STRUCTURAL DRAWING LIST

S101	STRUCTRAL NOTES AND STRUCTURE ISOMETRIC VIEW
S102	PANEL LAYOUT AND ASSEMBLY DETAILS
S103	PANEL "A", "B", "C" AND "D" DETAILS
S104	PANEL "E", "F", "G" AND "H" DETAILS
S105	PANEL "J", CAST IN PLACE SLAB AND CONNECTOR DETAILS
S106	HANDRAIL AND CONNECTION DETAILS

Rev	Date	Description	Drawn	Design	Appd
2	JULY 29, 2016	GENERAL REVISION	BRN	BRN	BRN
1	JULY 7, 2016	ISSUED FOR "CONSTRUCTION"	BRB	BRB	BRN

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ORIGINAL DWG SIZE: ARCH D (24" x 36")

McElhanney
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PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — B. R. HIGGS — 39113
July 29, 2016
Approved Sealed

TRIKON PRECAST
601 PATTERSON STREET WEST, CRANBROOK, BC, V1C 6T3

TECK - FORDING RIVER
FISH BARRIER STRUCTURE
STRUCTURAL NOTES AND ISOMETRIC VIEW

Drawing No. S101
Project Number 2441-00428-00
Rev. 2

CONTRACTOR TO VERIFY ALL ELEVATIONS AND DIMENSIONS PRIOR TO FABRICATION.

Tri-Kon Precast Products Ltd.
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PRODUCT
Custom Precast

DRAWING
Fish Barrier: Structural Notes and Isometric View

WEIGHT

DRAWING NO.
S101

DATE
JULY 29, 2016

SHEET
01 of 8

UNITS / SCALE
As per drawing

Request A Quote