



NOTES:

- NEW GRATING IS TO BE INSTALLED OVER EXISTING CONCRETE SLAB.
- PROVIDE TRANSIT ON RAMP AT ALL CHANGES IN LEVEL GREATER THAN 127mm AT JUNCTION OF CONCRETE SLAB AND NEW GRATING.
- PROVIDE ACCESS HATCH AT ALL VALVE AND HOSE BB LOCATIONS BELOW GRATING. LOCATION TO BE COORDINATED w/ OWNER.
- MODIFY GRATING AS REQUIRED AT ALL CONDUIT, PIPING, RAMP, GUARDRAILS, ETC. TO PROVIDE A LEVEL GRATING SURFACE.
- MODIFY GRATING TO ACCOMMODATE FOR GATES AT EACH EXTERIOR TANK IN FISHWAY. COORDINATE w/ OWNER.

LEGEND:



- BUILDINGS • EARTH & ENVIRONMENT • ENERGY •
- INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •

CAUTION: DO NOT SCALE DRAWINGS.
 THIS REPRODUCTION OR USE AT A SIZE DIFFERENT THAN ORIGINAL OR ANY REPRODUCTION OF THIS DOCUMENT IS UNAUTHORIZED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CONDITIONS OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CONDITIONS OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CONDITIONS OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CONDITIONS OF THE WORK.

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DEMOLITION GENERAL NOTES:

- WHERE NEW FRP GRATING IS SHOWN, EXISTING GRATING IS TO BE REMOVED IN THEIR ENTIRETY. ALL DIMENSIONS ARE TO BE CONFIRMED ON SITE.
- WHERE NEW FRP GRATING IS SHOWN, ALL EXISTING STEEL SUPPORTS ARE TO BE REMOVED. NEW STEEL SUPPORTS TO BE PROVIDED, WITH SIZES, LOCATIONS AND CONNECTIONS DETAILED ON SHOP DRAWINGS.
- COORDINATE REMOVALS WITH ITEMS REMAINING AND NEW WORK WHERE APPLICABLE.
- REMOVE ITEMS IN A MANNER THAT WILL LEAVE REMAINING SURFACES ACCEPTABLE TO RECEIVE NEW WORK.
- REWORK EXISTING SURFACES, AS REQUIRED, TO RECEIVE NEW WORK.
- ALL DIMENSIONS FOR REMOVALS TO BE COORDINATED AND CONFIRMED ON SITE.

GENERAL NOTES:

- ALL DIMENSIONS SHOWN ARE +/- AND ARE TO BE CONFIRMED ON SITE AND ALL DISCREPANCIES REPORTED TO THE ENGINEER, ARCHITECT AND AGREED UPON PRIOR TO PROCEEDING. DO NOT SCALE THESE DRAWINGS FOR CONSTRUCTION PURPOSES. USE FIGURED DIMENSIONS AS NOTED.
- COORDINATE REMOVALS WITH ITEMS REMAINING AND NEW WORK WHERE APPLICABLE.
- REMOVE ITEMS IN A MANNER THAT WILL LEAVE REMAINING SURFACES ACCEPTABLE TO RECEIVE NEW WORK. REMOVE ITEMS COMPLETE WITH ALL FASTENERS, BRACKETS AND ACCESSORIES. COORDINATE REMOVALS WITH ITEMS TO REMAIN. COMPLETE REMOVALS TO ADJACENT SURFACES. NEAREST JOINT OR FRAMING BACKUP AND MAKE READY FOR NEW WORK.
- INSTALL PRODUCTS PER MANUFACTURER'S INSTRUCTIONS. RECOMMENDATIONS, UNLESS NOTED OTHERWISE.
- COORDINATE WITH OWNER FOR ACCESS TO ALL WORK AREAS.
- CONTRACTOR TO PROVIDE SHOP DRAWINGS AND/OR PRODUCT DATA FOR ALL MATERIALS LISTED IN SPECIFICATION.
- EXISTING STRUCTURE HAS BEEN REPORTED TO CONTAIN LEAD PAINT. CONTRACTOR TO TAKE ALL NECESSARY PRECAUTIONS AND PROVIDE WORKERS WITH APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT TO PROTECT WORKERS FROM EXPOSURE TO HAZARDOUS MATERIALS WITHIN THE AREA OF WORK IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT OF NEW BRUNSWICK.
- CONTRACTOR TO COORDINATE WORK WITH ANY OTHER WORK CONTRACTORS PROCEEDING WITHIN OR ADJACENT TO THE AREA OF WORK THROUGHOUT THE PROJECT.
- FISH ARE NOT TO BE MOVED DURING THE PROJECT. CONTRACTOR TO COORDINATE WORK AROUND TANKS IN USE AND THE PROTECTION OF THE TANKS WITH OWNER.

PLAN
 RIGHT AND LEFT WING FISH POND GRATING

1:50

SPECIFICATIONS:

PART 1 FRP GRATING

- DESIGN CRITERIA
 - DESIGN SHALL BE IN ACCORDANCE WITH NATIONAL BUILDING CODE 2010 (NBC).
 - DESIGN LIVE LOADINGS (UNFACTORED), UNLESS NOTED OTHERWISE ON DRAWINGS:
 - STAIRS: 4.8 KN/M2
 - ACCESS WALKWAYS: 4.8 KN/M2
 - EQUIPMENT ACCESS PLATFORMS: 4.8 KN/M2
 - ALL FRP GRATING AND STAIR TREAD: 1.4 KN POINT LOAD, NOT SIMULTANEOUS WITH UNIFORM LOADINGS.
 - FEED CART LOAD: 1 KN UNFACTORED POINT LOAD
 - MOULDED GRATING AND MOULDED STAIR TREADS SHALL NOT DEFLECT MORE THAN 8.4 MM.
 - COORDINATE AND TAKE INTO ACCOUNT IN THE DESIGN ALL EQUIPMENT AND PIPE PENETRATIONS.
 - FEED CART LOAD, UNFACTORED 8KN POINT LOAD.
- SUBMITTALS
 - SHOP DRAWINGS FOR FRP GRATING AND STAIR TREADS, STAMPED AND SIGNED BY PROFESSIONAL ENGINEER REGISTERED OR LICENSED IN THE PROVINCE OF NEW BRUNSWICK.
 - INDICATE MATERIALS, CORE THICKNESSES, FINISHES, CONNECTIONS, JOINTS, METHOD OF ANCHORAGE, SIZE AND NUMBER OF ANCHORS OR FASTENERS, SUPPORTS, REINFORCEMENT, PROFILES, SIZES, ATTACHMENTS, DETAILS, AND ACCESSORIES.
 - INDICATE DESIGN LOADS, DESIGN CODES.
 - INCLUDE ERECTION DRAWINGS, ELEVATIONS AND DETAILS WHERE APPLICABLE.
 - INDICATE CONNECTIONS TO SUPPORTING FRAMING.
- PRODUCT DATA
 - SUBMIT MANUFACTURER'S PRINTED PRODUCT LITERATURE, SPECIFICATIONS AND DATA SHEETS.
- OWNER'S OCCUPANCY:

EXISTING FACILITY WILL BE OCCUPYING DURING CONSTRUCTION PERIOD FOR EXECUTION OF NORMAL OPERATIONS. COOPERATE WITH OWNER IN SCHEDULING OPERATIONS TO MINIMIZE CONFLICT AND FACILITATE OWNER USAGE.
- TIMING:
 - GRATING SUPPORTS ARE IN A SEMI ENCLOSED LOCATION. REPLACEMENT OF EXISTING CORRODED SUPPORTS CAN BE PERFORMED WITH COORDINATION OF OWNER. TEMPORARY HOSES ARE TO BE SUPPLIED AND INSTALLED BY THE CONTRACTOR AS REQUIRED TO PROVIDE FLOW TO OCCUPIED FISH PONDS DURING PIPELINE SHUTDOWNS. IF AND WHERE REQUIRED THAT EXTING LONGER THAN TWO HOUR DURATION, COORDINATE TEMPORARY TIE IN LOCATIONS WITH OWNER. EXISTING PVC UNION CONNECTIONS ARE INSTALLED AT PONDS TO ALLOW CONNECTION TO WELL OR ROVER WATER SUPPLY.
 - ANY SHUTDOWN TO ENABLE WORK WILL BE LIMITED TO SPECIFICALLY TYPED AND SCHEDULED LOCATIONS. FISH WILL OFTEN REMAIN OCCUPIED IN PONDS IN ASSOCIATED AREAS WHILE NEW GRATING / SUPPORT REPLACEMENT WORK IS BEING CONDUCTED. ALLOW BUSINESS CONTINUITY.
- PROTECTION:
 - SOME TANKS WILL CONTAIN FISH STOCK.
 - PROVIDE PROTECTION AND CONTAINMENT MECHANISMS TO CAPTURE MATERIALS TO PREVENT SOLID AND LIQUID CONTAMINATION AND OBJECTS FROM FALLING INTO WATER OR TANKS.
 - TYPE OF PROTECTION AND CONTAINMENT MECHANISMS TO BE APPROVED BY OWNER.
 - THIS CONTRACTOR SHALL GIVE ALL NOTICES, OBTAIN ALL PERMITS AND PAY ALL FEES IN ORDER THAT THE WORK HEREIN MAY BE CARRIED OUT.
 - ALL LABOUR, MATERIALS AND WORKMANSHIP SHALL BE WARRANTED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF ACCEPTED SUBSTANTIAL COMPLETION OF THE WORK.
 - THE CONTRACTOR SHALL MAKE A THOROUGH EXAMINATION OF THE SITE PRIOR TO BEGINNING THE WORK IN ORDER TO BECOME AWARE OF THE EXTENT OF EXISTING NEW WORK AND THE EXTENT OF REQUIRED COORDINATION WITH OTHER TRADES. THIS SHALL INCLUDE VERIFICATION OF EXISTING PIPING DIMENSIONS TO CONFIRM FITTINGS BEING PURCHASED ARE COMPATIBLE WITH EXISTING PIPING. NO ADDITIONAL COSTS SHALL BE CONSIDERED DUE TO A FAILURE TO EXAMINE EXISTING SITE CONDITIONS AND FACILITY OPERATIONS, BEFORE BEGINNING THE WORK. THIS CONTRACTOR SHALL CONFORM TO THEIR OWN SATISFACTION THAT THE WORK OF THIS TRADE CAN BE CARRIED OUT

- WITHOUT CHANGES TO THE EQUIPMENT SHOWN ON THE DRAWINGS, ANY DEFECTS, INTERFERENCES OR COMPLIANTS SHALL BE REPORTED AT ONCE TO THE OWNER FOR RESOLUTION. NO ADDITIONAL COSTS WILL BE CONSIDERED DUE TO A FAILURE TO REPORT SUCH OCCURRENCES.
- CUTTING AND PATCHING IS TO BE THE RESPONSIBILITY OF THE CONTRACTOR.
 - CONNECTIONS INTO EXISTING SYSTEMS TO BE MADE AT DATE AND TIME APPROVED BY OWNER. MAKE REQUEST FOR CONNECTION DATE AND TIME IN WRITING.
 - SUBMIT ONE COPY OF FIELD REFINED RECORD DRAWINGS TO OWNER FOR REVIEW.
 - CONTRACTOR IS RESPONSIBLE FOR GENERAL CLEANUP OF WORK AREAS AFTER COMPLETION.
 - ALL WELDING SHALL BE DONE BY CERTIFIED WELDERS.
 - ALL WORK SHALL BE DONE IN A SAFE MANNER, IN ACCORDANCE WITH NEW BRUNSWICK CONSTRUCTION SAFETY ASSOCIATION REQUIREMENTS, SITE SAFETY REQUIREMENTS, AND FIRE WATCH IF ANY WELDING/CUTTING IS DONE IN A COMBUSTIBLE AREA.
 - QUALITY ASSURANCE
 - CERTIFICATIONS: IF REQUESTED, SUBMIT PRODUCT CERTIFICATES SIGNED BY MANUFACTURER CERTIFYING MATERIALS COMPLY WITH SPECIFIED PERFORMANCE CHARACTERISTICS AND CRITERIA AND PHYSICAL REQUIREMENTS.
- PART 2 PRODUCTS**
- ACCEPTABLE MANUFACTURERS
 - FISHER-LULLO
 - PRECISIONERING
 - FIBERGRATE
 - MATERIALS
 - MOULDED FRP GRATING:
 - TYPE: SQUARE MESH PATTERN
 - RESIN: OF CHEMICAL PROOF
 - COLOR: SAFETY YELLOW
 - TOP SURFACE: GRT TOP
 - ALL EDGES BANNED
 - MOULDED FRP STAIR TREADS:
 - TYPE: RECTANGULAR MESH PATTERN
 - RESIN: OF CHEMICAL PROOF
 - COLOR: SAFETY YELLOW
 - TOP SURFACE: GRT TOP
 - ALL EDGES BANNED
 - FASTENERS: STAINLESS STEEL
 - MULTILAYERED FIBERGLASS STRUCTURAL SHAPES:
 - ALL STRUCTURAL SHAPES ARE TO BE MANUFACTURED BY THE FILM TENSION PROCESS WITH A GLASS CONTENT MINIMUM OF 45%, MAXIMUM OF 55% BY WEIGHT. THE STRUCTURAL SHAPES SHALL BE COMPOSED OF FIBERGLASS REINFORCEMENT AND RESIN IN QUALITIES, QUANTITIES, PROPERTIES, ARRANGEMENTS AND DIMENSIONS AS NECESSARY TO MEET THE DESIGN REQUIREMENTS AND DIMENSIONS AS SPECIFIED IN THE CONTRACT DOCUMENTS.
 - STRUCTURAL STEEL:
 - C AND L SHAPES - CSA C40.21 300M (FY = 300 MPa)
 - HESS SHAPES - ASTM A501, GRADE C OR CSA C40.20, GRADE C
 - PLATES AND BARS - CSA C40.21 300M
 - THREADED ROD - F1554 GRADE SS
 - STRUCTURAL BOLT ASSEMBLIES
 - BOLTS: STANDARD ASS BOLTS SHALL BE HIGH STRENGTH, HEXAGON HEAD BOLTS MEETING THE REQUIREMENTS OF ASTM A325 TYPE 1. BOLTS, BOLT GEOMETRY SHALL CONFORM TO ANSI B18.2.1
 - WASHERS - WASHERS SHALL BE HARDENED PLAN STEEL, WASHERS MEETING THE REQUIREMENTS OF ASTM F436
 - NUTS - NUTS SHALL BE HEAVY HEXAGON STRUCTURAL NUTS MEETING THE REQUIREMENTS OF ASTM A550 GRADE CH

- NOT DIMENSIONS SHALL CONFORM TO ANSI B18.2.2
- ADHESIVE
 - HILTI HT-HY 200 ADHESIVE ANCHORING SYSTEM BY HILTI OR APPROVED EQUIVALENT.
 - FABRICATION
 - VERIFY ALL DIMENSIONS ON SITE PRIOR TO SHOP FABRICATION.
 - FABRICATE ITEMS OF SIZES AND PROFILES DETAILED ON DRAWINGS, WITH JOINTS NEATLY FITTED AND PROPERLY SECURED.
 - FABRICATE WORK SQUARE, TRUE, STRAIGHT AND ACCURATE TO REQUIRED SIZE, WITH JOINTS CLOSELY FITTED AND PROPERLY SECURED.
 - SUPPLY ALL COMPONENTS REQUIRED FOR PROPER ANCHORAGE OF GRATING TO SUPPORT STRUCTURE.
 - ACCURATELY FORM ALL CONNECTIONS AND JOINTS WITH EXPOSED FACES FLUSH, MITRES AND JOINTS TIGHT.
 - SEALING: ALL SHOP FABRICATED GRATING CUTS SHALL BE SEALED TO PROVIDE MAXIMUM CORROSION RESISTANCE. ALL FIELD FABRICATED GRATING CUTS SHALL BE COATED SIMILARLY BY THE CONTRACTOR IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
 - HARDWARE: TYPE 316 STAINLESS STEEL, HOLD DOWN CLIPS SHALL BE PROVIDED AND SPACED AT A MAXIMUM OF FOUR FEET APART WITH A MINIMUM OF FOUR PER PIECE OF GRATING, OR AS RECOMMENDED BY THE MANUFACTURER.
 - EXECUTION
 - EXAMINATION
 - VERIFICATION OF CONDITIONS:
 - VERIFY THAT CONDITIONS OF SUBSTRATES PREVIOUSLY INSTALLED UNDER OTHER SECTIONS OR CONTRACTS ARE ACCEPTABLE FOR INSTALLATION IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - INFORM CONSULTANT OF UNACCEPTABLE CONDITIONS IMMEDIATELY UPON DISCOVERY.
 - PROCEED WITH INSTALLATION ONLY AFTER UNACCEPTABLE CONDITIONS HAVE BEEN REMEDIATED.
 - ERECTION
 - OBTAIN CONSULTANT'S PERMISSION PRIOR TO SITE CUTTING OR MAKING ADJUSTMENTS THAT ARE NOT PART OF ORIGINAL WORK.
 - CONTRACTOR SHALL INSTALL GRATINGS IN ACCORDANCE WITH MANUFACTURER'S ASSEMBLY DRAWINGS. FASTEN GRATING PANELS SECURELY IN PLACE WITH HOLD DOWN FASTENERS AS SPECIFIED HEREIN.
 - FIELD CUT AND DRILL FIBERGLASS REINFORCED PLASTIC PRODUCTS WITH CARBIDE OR DIAMOND TYPED BITS AND BLADES. SEAL CUT OR DRILLED SURFACES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. FOLLOW MANUFACTURER'S INSTRUCTIONS WHEN CUTTING OR DRILLING FIBERGLASS PRODUCTS OR USING RESIN PRODUCTS. PROVIDE ADEQUATE VENTILATION.
 - REPLACE ITEMS DAMAGED IN COURSE OF INSTALLATION.
 - PERFORM NECESSARY CUTTINGS AND ALTERING FOR THE INSTALLATION OF WORK OF OTHER SECTIONS, AND AS INDICATED ON DRAWINGS. NO ADDITIONAL CUTTING IS TO BE DONE WITHOUT THE APPROVAL OF THE CONSULTANT.
 - CLEANING
 - PERFORM CLEANING AFTER INSTALLATION TO REMOVE CONSTRUCTION AND ACCUMULATED ENVIRONMENTAL DIRT.
 - UPON COMPLETION OF INSTALLATION, REMOVE SURPLUS MATERIALS, RUBBISH, TOOLS AND EQUIPMENT.

No.	Revision	Date

FOR INFORMATION ONLY

Professional (Seal)

Drawn By:	PFM / DPE
Designed By:	PFM
Design Checked By:	
Scale:	AS SHOWN
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Dwg. Title: **OVERALL TRENCH GRATING PLANS**

Project No: **FRE-00237427-A0**

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