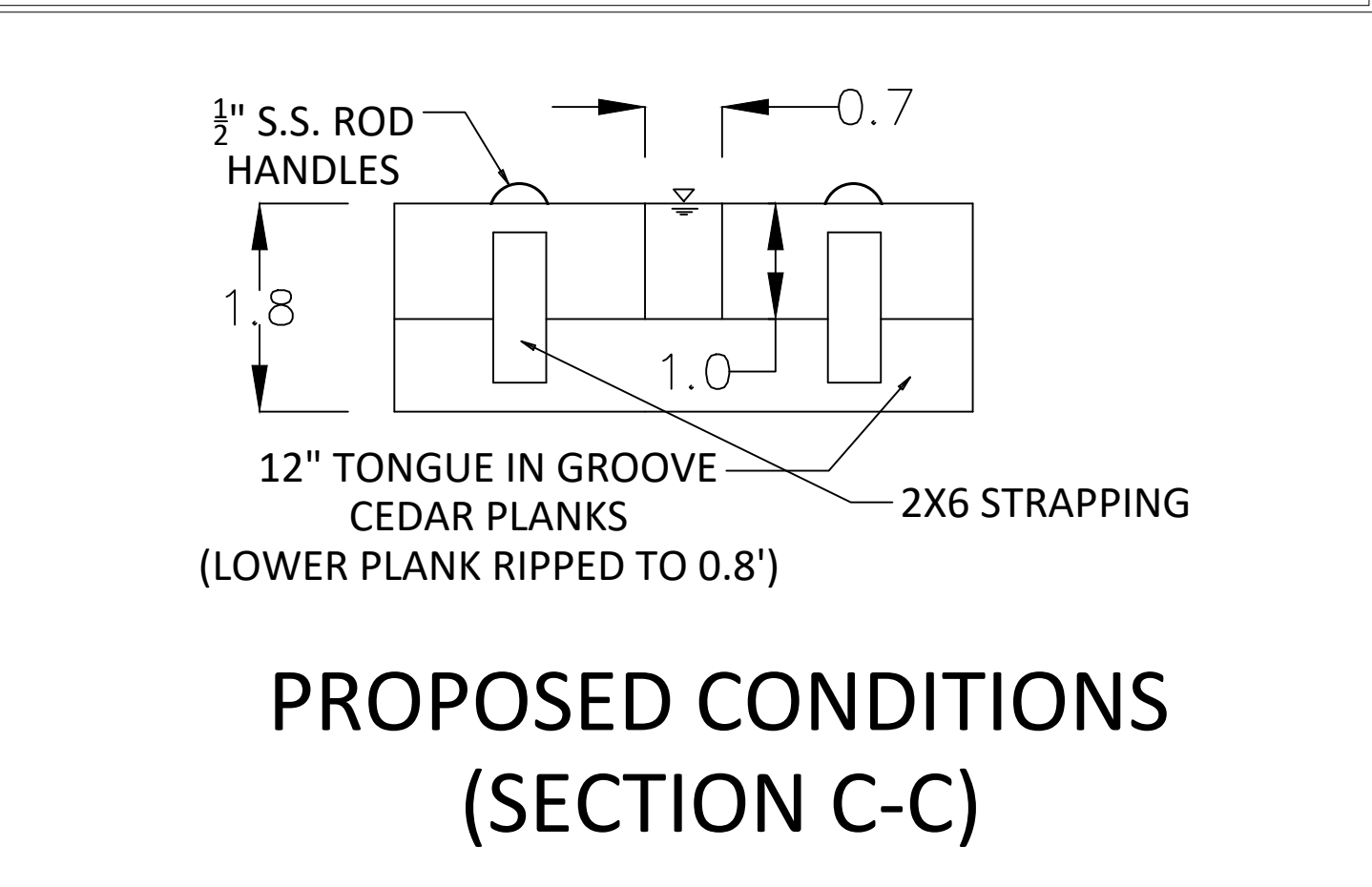
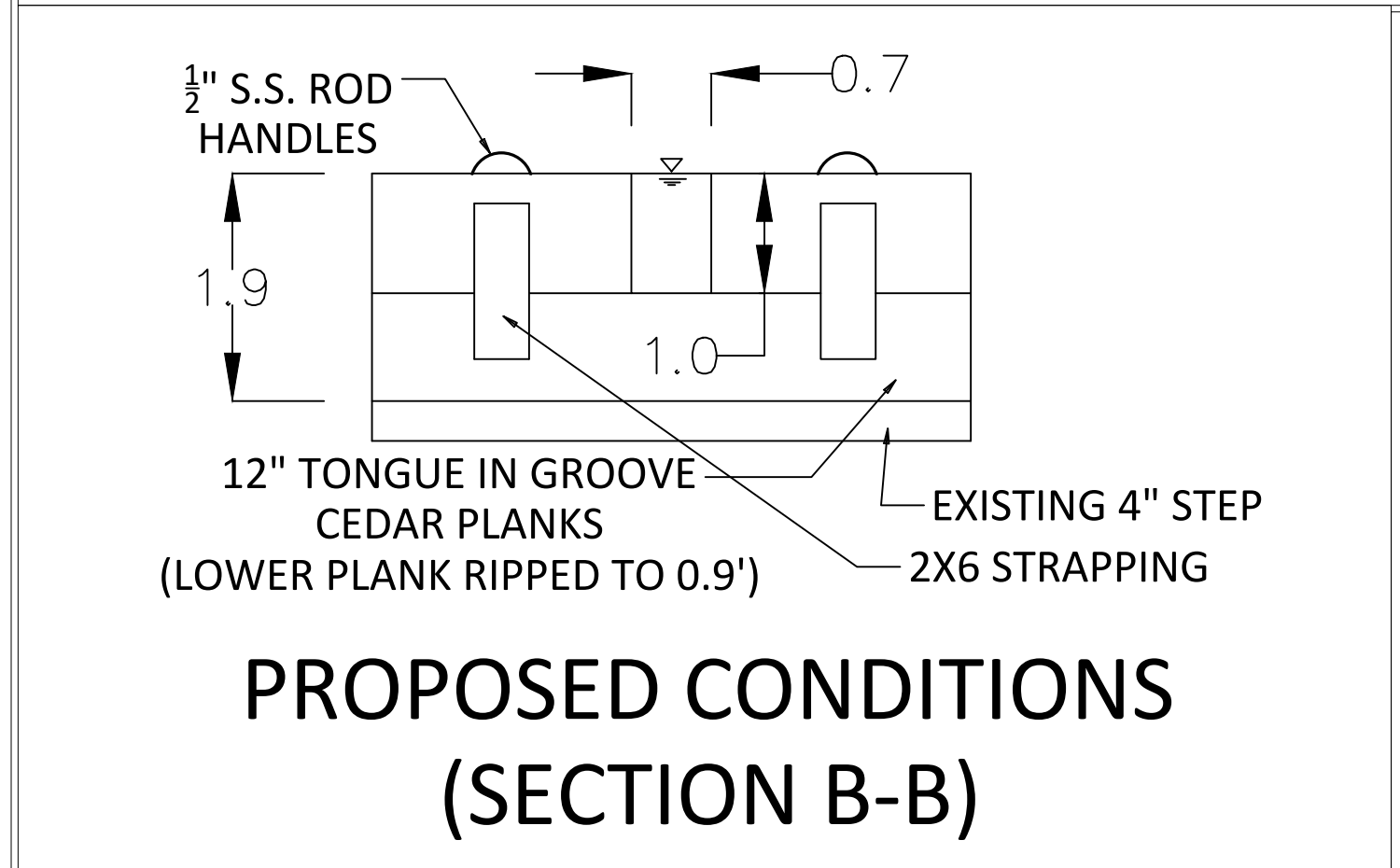
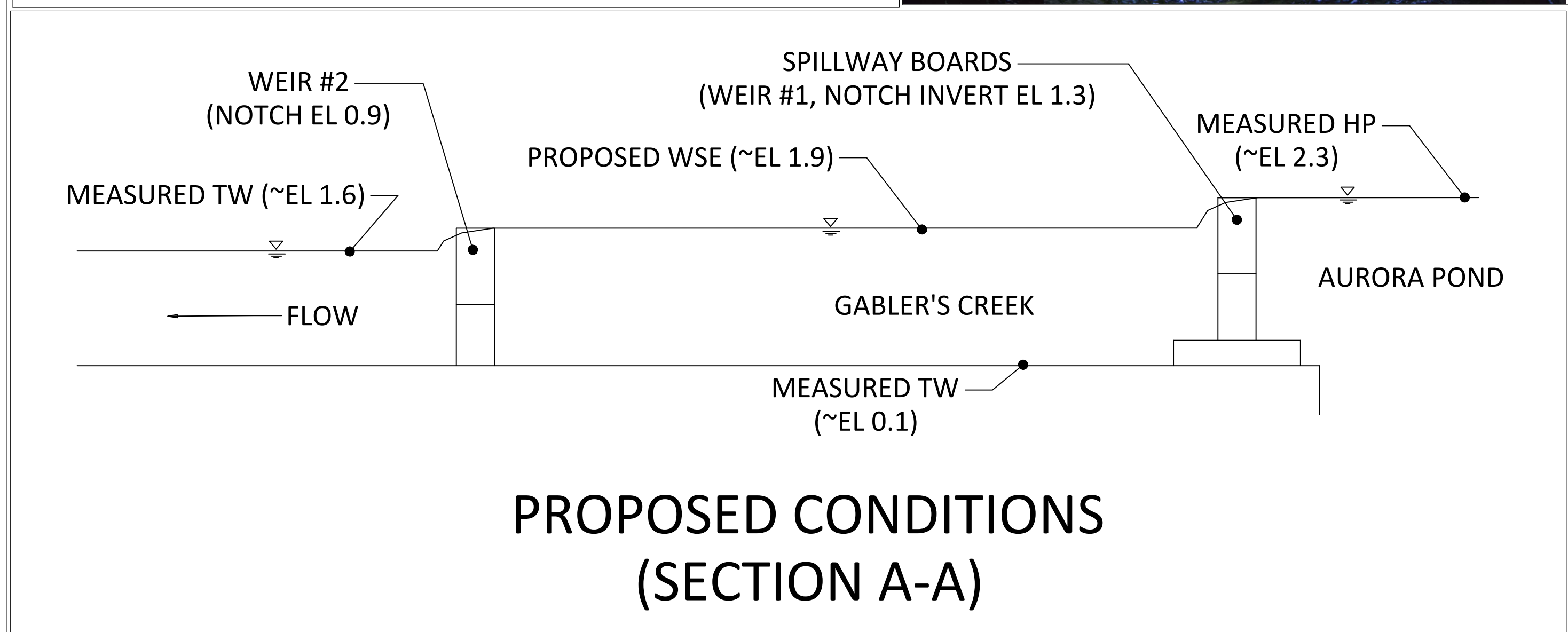
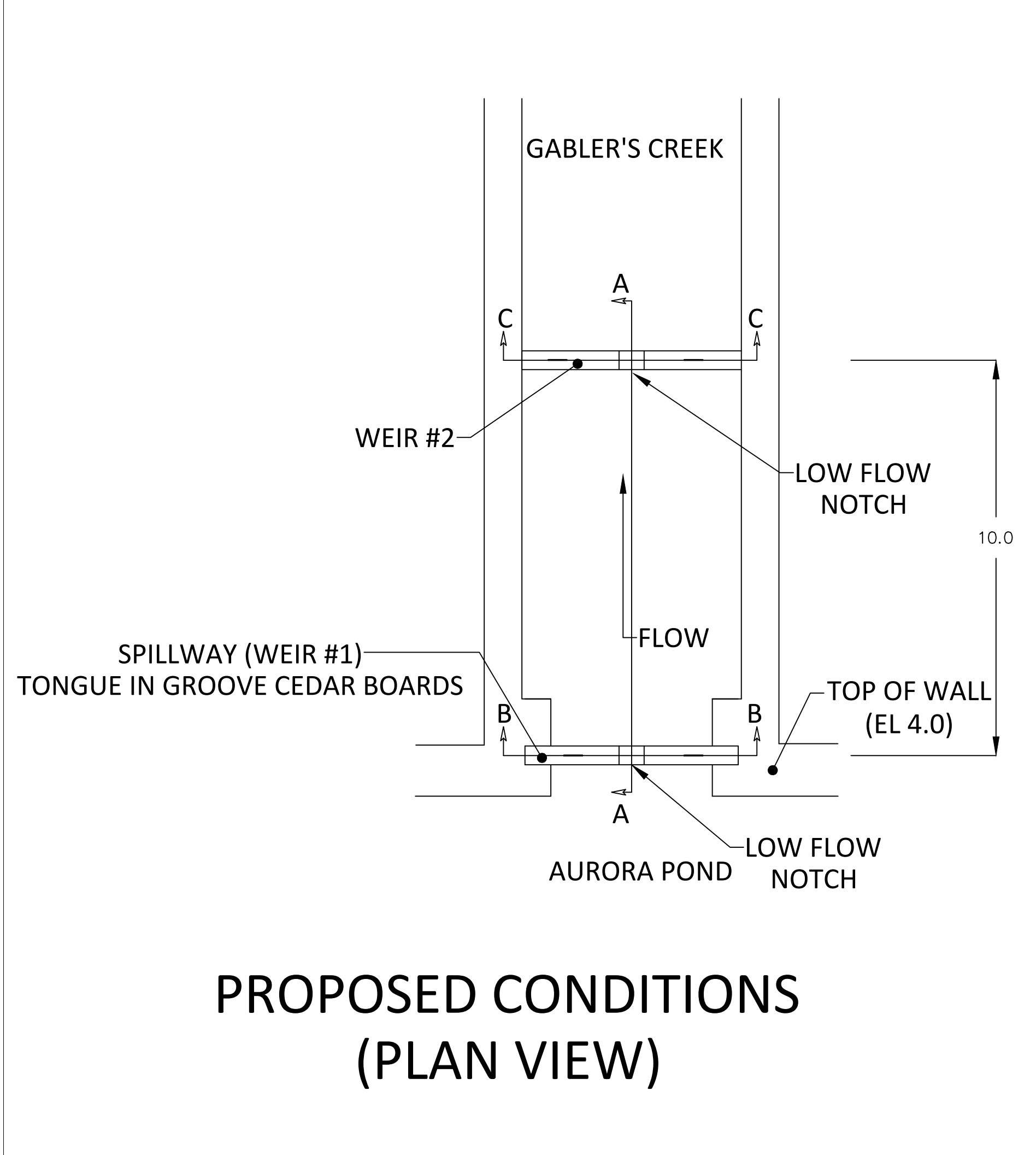


- NOTES:**
- THE DETAILS PROVIDED WITHIN THIS SHEET ARE INTENDED TO PROVIDE A FISH PASSAGE SOLUTION AT THE SPILLWAY OF AURORA POND IN QUEENS, NY. THE POND LEVEL IS CURRENTLY CONTROLLED BY TONGUE IN GROOVE CEDAR BOARDS. MEASUREMENTS TAKEN BY SEATUCK ENVIRONMENTAL ASSOCIATION (SEA) DURING LOW FLOWS DEMONSTRATED A DROP OF APPROXIMATELY 0.7 ft, WITH A SHALLOW DEPTH OVER THE SPILLWAY BOARDS, AND FLOW THAT PLUNGES INTO GABLER'S CREEK DOWNSTREAM. THE TARGET SPECIES, RIVER HERRING, REQUIRE A SUBMERGENCE DEPTH (MEASURED FROM THE DOWNSTREAM POOL DOWN TO THE INVERT, OR LOWEST POINT, OF AN UPSTREAM WEIR) OF SUFFICIENT DEPTH SUCH THAT THEY CAN SWIM THROUGH RATHER THAN BEING FORCED TO LEAP OVER A WEIR.
 - ALL ELEVATIONS DISPLAYED ON THIS SHEET ARE RELATIVE TO THOSE PULLED FROM THE 9/2002 DESIGN PLANS ASSOCIATED WITH THE UDALL'S COVE PARK FOR THE CITY OF NEW YORK PARKS AND RECREATION, AND ARE IN FEET. THE 9/2002 PLANS SHOWED THE TOP OF THE SPILLWAY BOARDS TO RESIDE AT ELEVATION 2.0, WITH A HEADPOND FLUCTUATION BETWEEN 2.0 TO 3.78. THE PLANS DID NOT DEPICT DETAILS ASSOCIATED WITH THE ROCK WALLS THAT LINE BOTH SIDES OF GABLER'S CREEK JUST DOWNSTREAM. ACCORDING TO SEA STAFF, THERE IS APPROXIMATELY 30-40 ft OF LENGTH TO WORK WITH BEFORE GABLER'S CREEK ENTERS A CULVERT. THIS LENGTH WAS DEPICTED AS STRAIGHT, BUT MAY NOT BE THE CASE IN THE FIELD.
 - THE MEASUREMENTS TAKEN BY SEA PERSONNEL WERE USED TO ESTIMATE A FLOW OF APPROXIMATELY 1.5 cfs AT THE ASSOCIATED HEADPOND OF 2.3. IT IS ASSUMED THAT THIS IS A LOW FLOW FOR THE SYSTEM, HOWEVER THE BASE FLOW IS UNKNOWN.
 - THE PROPOSED DESIGN HAS THE FOLLOWING ATTRIBUTES:
 - ALTERING THE EXISTING SPILLWAY WITH A LOW FLOW NOTCH AND INCREASED HEIGHT (TOP OF BOARDS TO RESIDE AT ELEVATION OF 2.3), AND ADDING A SECOND WEIR 10 ft DOWNSTREAM.
 - A DROP PER WEIR OF 0.4 ft
 - A MINIMUM SUBMERGENCE DEPTH OF 0.6 ft (~7 in)
 - LOW FLOW NOTCHES WITH DIMENSIONS OF 0.7 ft IN WIDTH AND 1.0 ft IN DEPTH
 - THE WEIRS CAN BE CONSTRUCTED USING THE EXISTING TONGUE IN GROOVE CEDAR BOARDS OR DIMENSIONAL LUMBER. THE USE OF 1/2" S.S. RODS IN ORDER TO INSTALL AND TAKEOUT THE WEIRS WAS MAINTAINED.
 - THE BOARDS THAT MAKE UP THE WEIRS MAY HAVE TO BE STRAPPED ON THE UPSTREAM OR DOWNSTREAM SIDE FOR SUPPORT.
 - WEIR #1 WILL BE INSTALLED IN THE SAME LOCATION AS THE EXISTING BOARDS, SITTING ON AN EXISTING 4" STEP (IDENTIFIED BY SEA STAFF).
 - WEIR #2 SHOULD BE INSTALLED A MINIMUM OF 10 ft (CENTERLINE TO CENTERLINE) DOWNSTREAM OF WEIR #1. THE DETAILS OF THE ROCK WALLS (e.g., SIDE SLOPE) AND HOW WEIR #2 WILL TIE INTO THE ROCK WALLS IS NOT THE INTENTION OF THIS DESIGN PLAN. THE BOTTOM OF WEIR #2 SHOULD BE SEALED APPROPRIATELY TO THE EXISTING STREAMBED SUCH THAT LEAKAGE DOES NOT OCCUR.
 - THE FLOW THROUGH THE WEIRS WAS DESIGNED TO MAINTAIN THE ESTIMATED 1.5 cfs AT A HEADPOND ELEVATION OF 2.3. THIS IS ACCOMPLISHED VIA SUBMERGING WEIR #1 BY 0.6 ft. THE TAILWATER WAS MEASURED AT AN ELEVATION OF ROUGHLY 1.6. THE FLUCTUATION OF THE TAILWATER IS UNKNOWN. IF TAILWATER DROPS BELOW 1.6 DURING LOW FLOWS, A 3rd WEIR SHOULD BE CONSIDERED.
 - SHARP CORNERS SHOULD BE AVOIDED VIA CHAMFERING



UNITED STATES DEPARTMENT OF THE INTERIOR
 FISH AND WILDLIFE SERVICE
 FISH AND AQUATIC CONSERVATION
 FISH PASSAGE ENGINEERING

GABLER'S CREEK, QUEENS NY
 GENERAL FISH PASSAGE PLANS

SHEET 1 – PROPOSED WEIR GEOMETRY
 FISH PASSAGE DESIGN
 BRYAN SOJKOWSKI, P.E.

SURVEYED:	DESIGNED:	DRAWN:	CHECKED:
DATE:	MARCH 2022	DRAWING NO.:	SHEET 1 OF 1