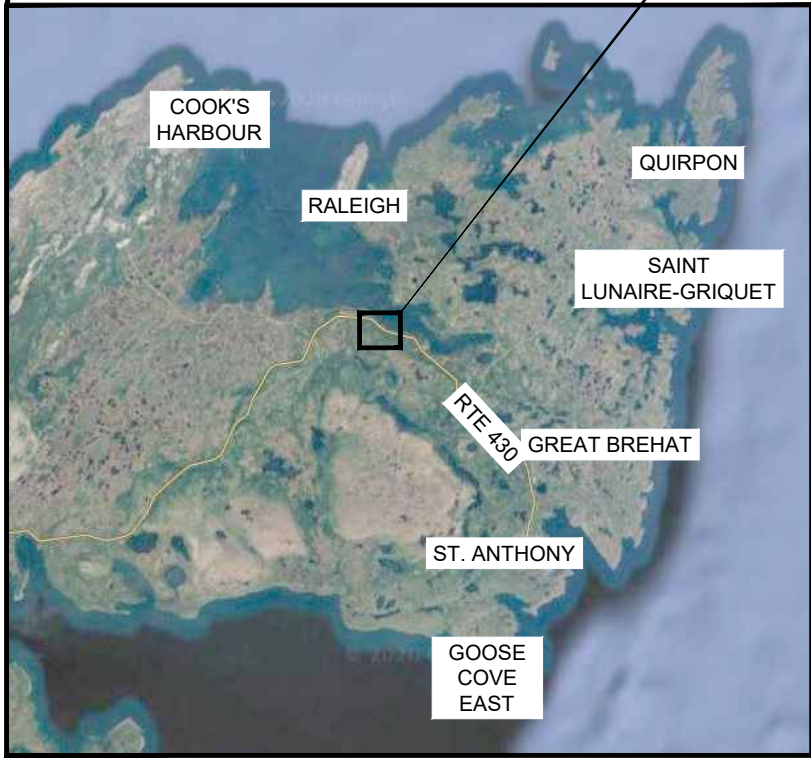
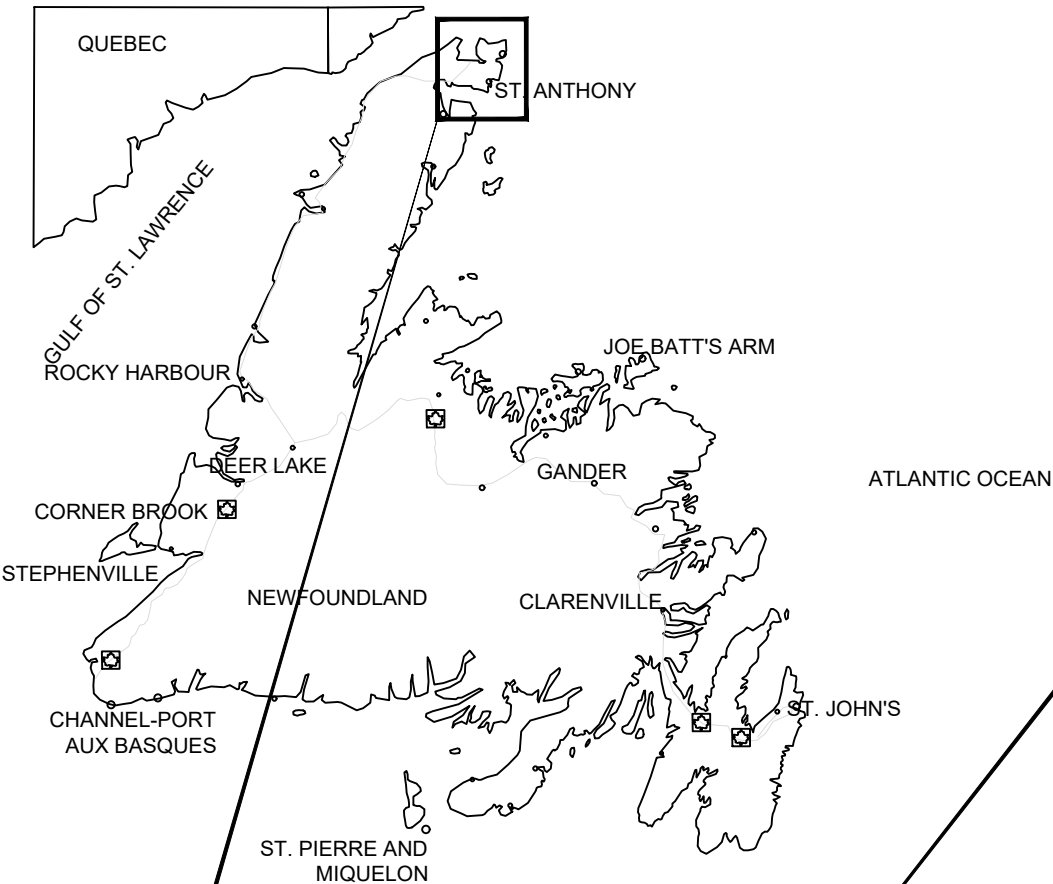


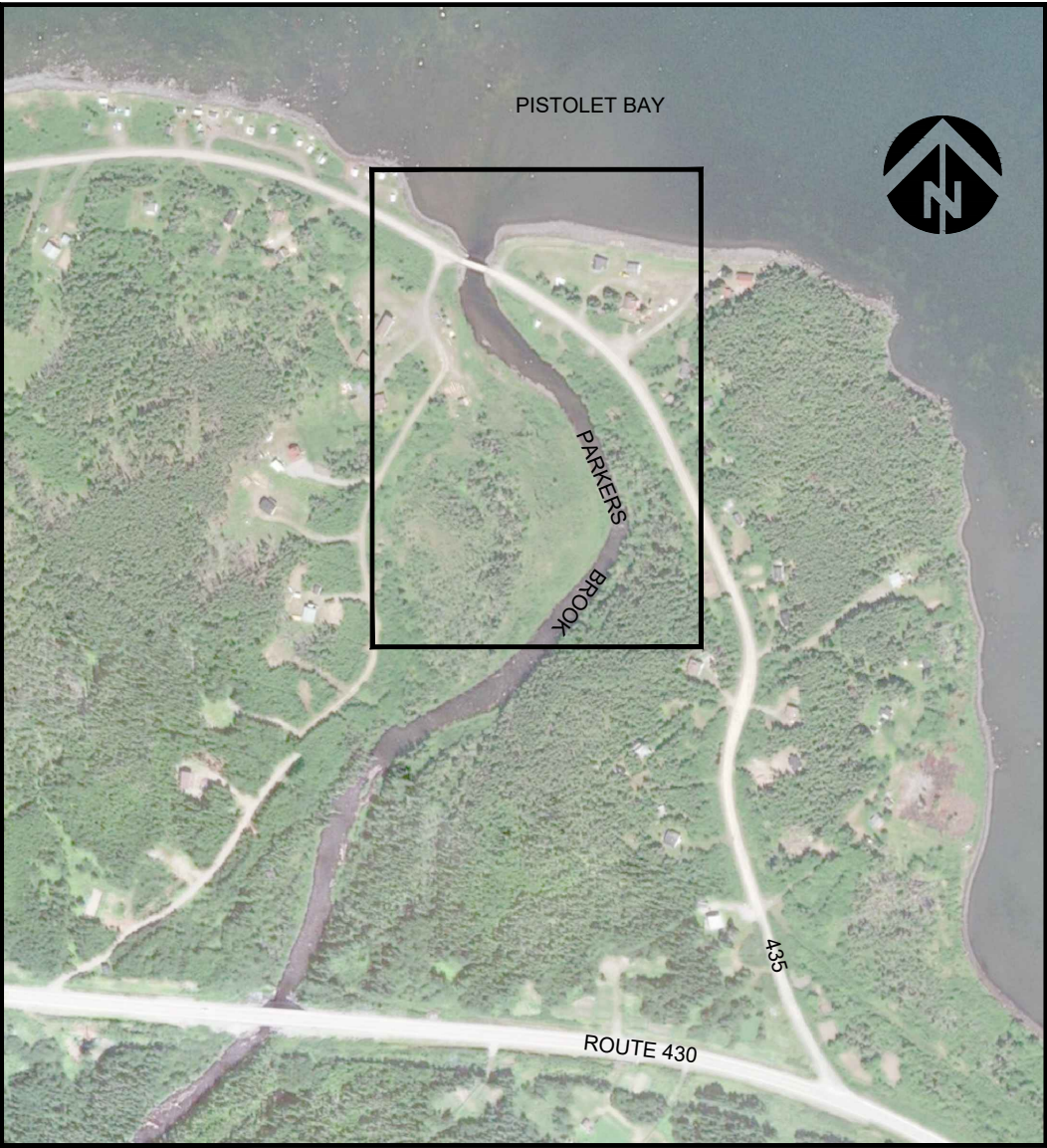
# PARKERS BROOK

## FISH ENHANCEMENT PROJECT

*Preliminary Design*



VICINITY MAP



PARKERS BROOK SITE

### SHEET LIST TABLE

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TOPOGRAPHIC AND BATHYMETRIC SURVEY DATA WERE COLLECTED BY INTER-FLUVE, INC. USING RTK GPS ON JULY 30, 2019 AND AUGUST 1, 2019.

UNITS: METERS

A DETAILED GEOTECHNICAL INVESTIGATION HAS NOT BEEN COMPLETED.

ALL CONSTRUCTION WORK SHALL OCCUR WITHIN THE DESIGNATED IN WATER WORK WINDOW, ANTICIPATED TO OCCUR FALL 2021.

ALL SAPLINGS AND TREES TO BE TRANSPLANTED OR REMOVED SHALL BE CLEARLY MARKED AND APPROVED BY OWNER.

ALL VEGETATION SHALL BE CUT AT GROUND LEVEL RATHER THAN GRUBBED, WHEN VEGETATION REMOVAL IS NECESSARY.

ALL DISTURBED AREAS OUTSIDE THE LIMITS OF DISTURBANCE SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER AT NO ADDITIONAL COST TO THE OWNER.

CONTRACTOR SHALL PERFORM FISH RESCUE AT ALL IN-WATER WORK AREAS PRIOR TO BEGINNING WORK. ALL FISH RESCUE EFFORTS SHALL BE PERFORMED BY PERSONNEL EXPERIENCED WITH THE COLLECTION AND HANDLING OF FISH FROM CONSTRUCTION SITES.

CHANNEL BED OR BANKS SHALL NOT BE DISTURBED UNTIL ALL FISH HAVE BEEN SALVAGED FROM ISOLATED WORK AREAS.

ALL FISH TRAPPED IN RESIDUAL POOLS WITHIN THE PROJECT AREA WILL BE CAREFULLY COLLECTED BY SEINE AND/OR DIP NETS AND PLACED IN CLEAN TRANSFER CONTAINERS WITH AN ADEQUATE VOLUME OF FRESH RIVER WATER.

CAPTURED FISH SHALL BE IMMEDIATELY RELEASED INTO THE RIVER AT AREAS SELECTED BY EXPERIENCED PERSONNEL. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY FEDERAL, PROVINCIAL, OR LOCAL PERMITS.

ADDITIONAL FISH SALVAGE MAY BE REQUIRED IF OVERLAND FLOW ENTERS THE PROJECTOWNER'S REPRESENTATIVE REVIEW FOR APPROVAL PRIOR TO IMPLEMENTATION. AREA DURING A HIGH TIDE.

ALL MATERIALS AND FUEL STORAGE IN THE WORK AREA SHALL BE STORED WITHIN ADEQUATE SECONDARY CONTAINMENT, AND SHALL BE COVERED WITH A SECURED IMPERVIOUS COVER WHEN NOT IN USE. ALL REFUELING SHALL TAKE PLACE IN DESIGNATED STAGING AREAS, WITH ADEQUATE GROUND CONTAINMENT IN PLACE.

A DESCRIPTION OF HAZARDOUS MATERIALS THAT WILL BE USED AND STORED ON-SITE, INCLUDING INVENTORY, STORAGE, AND HANDLING PROCEDURES SHALL BE AVAILABLE ON-SITE AT ALL TIMES DURING CONSTRUCTION. SPILL CONTAINMENT KITS (INCLUDING INSTRUCTIONS FOR CLEANUP AND DISPOSAL) ADEQUATE FOR THE TYPES AND QUANTITY OF HAZARDOUS MATERIALS USED ON-SITE WILL BE READILY AVAILABLE IN THE WORK AREA. WORKERS SHALL BE TRAINED IN SPILL CONTAINMENT PROCEDURES AND SHALL KNOW THE LOCATION OF SPILL CONTAINMENT KITS AT ALL TIMES.

ANY WASTE LIQUIDS GENERATED IN THE WORK AREA SHALL BE TEMPORARILY STORED UNDER AN IMPERVIOUS COVER UNTIL THEY CAN BE PROPERLY TRANSPORTED AND DISPOSED OF AT A FACILITY THAT IS APPROVED FOR RECEIPT OF HAZARDOUS MATERIALS.

STAGING AND STORAGE OF HAZARDOUS MATERIALS AND HEAVY EQUIPMENT MUST BE LOCATED AT LEAST 150 FEET FROM A WATERBODY OR WETLAND.

BIODEGRADEABLE PRODUCTS SHALL BE USED IN LIEU OF PETROLEUM-BASED HYDRAULIC FLUID WITHIN 150 FEET OF A WATERBODY OR WITHIN A WETLAND.

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR HAVING UTILITIES LOCATED PRIOR TO CONSTRUCTION ACTIVITIES.

THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE AFFECTED UTILITY SERVICE TO REPORT ANY DAMAGED OR DESTROYED UTILITIES. THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND LABOR TO AID THE AFFECTED UTILITY SERVICE IN REPAIRING DAMAGED OR DESTROYED UTILITIES AT NO ADDITIONAL COST.

STAKING OF PROJECT LIMITS, GRADE STAKES, AND ELEVATION CONTROL POINTS BY OTHERS. SOME FIELD ADJUSTMENTS TO THE LINES AND GRADES ARE TO BE EXPECTED.

CONTRACTOR SHALL MEET WITH THE OWNER OR OWNER'S REPRESENTATIVE TO DEFINE AND MARK ACCESS ROUTES AND LIMITS OF DISTURBANCE PRIOR TO MOBILIZATION OF EQUIPMENT OR MATERIALS ONTO THE SITE.

THE CONTRACTOR SHALL REPLACE DAMAGED OR DESTROYED CONSTRUCTION STAKES AT NO ADDITIONAL COST.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING ANY REQUIRED TRAFFIC CONTROL INCLUDING, BUT NOT LIMITED TO, SIGNAGE AND FLAGGERS, AND FOR OBTAINING ANY REQUIRED ACCESS PERMITS.

ALL EQUIPMENT, MATERIALS, AND PERSONNEL SHALL REMAIN WITHIN THE LIMITS OF DISTURBANCE.

THE CONTRACTOR SHALL KEEP THE WORK AREAS IN A NEAT CONDITION, FREE OF DEBRIS AND LITTER FOR THE DURATION OF THE PROJECT.

ALL DISTURBED AREAS INCLUDING ROADS, DRIVEWAYS, STAGING/STOCKPILE AREAS, AND ACCESS ROUTES SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER UNLESS OTHERWISE INDICATED IN DRAWINGS.

ALL TEMPORARY ROADS IN AREAS PRONE TO FLOODING SHALL BE OBLITERATED BY THE END OF THE APPROVED CONSTRUCTION WINDOW.

ALL SOILS IMPACTED BY TEMPORARY ACCESS ROADS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 8 INCHES AND SEEDED AND MULCHED DURING DECOMMISSIONING UNLESS OTHERWISE NOTED ON PLANS.

**THE CONTRACTOR SHALL PROVIDE MATERIALS, EQUIPMENT, AND PERSONNEL TO INSTALL COFFERDAMS TO ISOLATE THE WORK AREAS FROM THE STREAM.**

THE CONTRACTOR MAY PROPOSE POSSIBLE ALTERNATE COFFERDAM DESIGNS FOR TOWNER'S REPRESENTATIVE REVIEW FOR APPROVAL PRIOR TO IMPLEMENTATION.

CONTRACTOR SHALL BE SOLELY RESPONSIBLE AT OWN EXPENSE FOR PROVIDING AND MAINTAINING ALL NECESSARY EROSION CONTROL FACILITIES TO COMPLY WITH APPLICABLE EROSION CONTROL PERMITS, REGULATIONS, AND TO MAINTAIN CLEAN ACCESS ROUTES.

CONTRACTOR SHALL PERFORM CONSTRUCTION DEWATERING IN SUCH A MANNER AS TO AVOID THE RELEASE OF TURBID OR SEDIMENT-LADEN WATER IN ORDER TO PREVENT CONTAMINATION OR INCREASED TURBIDITY OF SURFACE WATERS.

SEDIMENT-LADEN WATER MAY BE PUMPED TO AN UPLAND DISCHARGE LOCATION AND ALLOWED TO SHEET FLOW THROUGH EXISTING VEGETATION BEFORE INFILTRATING INTO THE GROUND.

IF THIS METHOD IS NOT SUFFICIENT TO PREVENT RETURN OF TURBID WATER TO SURFACE WATERS, A "DIRT-BAG" OR SEDIMENT RETENTION STRUCTURE MAY BE REQUIRED AS NECESSARY TO COMPLY WITH LAWS AND PERMIT REQUIREMENTS AT NO ADDITIONAL COST.


CONTRACTOR WILL PROVIDE ANY PUMPS, HOSES, AND FITTINGS NEEDED TO PERFORM THE DEWATERING. THE PUMP EQUIPMENT SELECTED BY THE CONTRACTOR SHALL BE SUFFICIENT TO DEWATER THE SITE THOROUGHLY.

CONTRACTOR SHALL ALLOW FOR EXPANSION OF EXCAVATED MATERIAL AND COMPACTION OF PLACED MATERIAL AT NO ADDITIONAL MEASURE OR COST TO THE D OWNER.

LOCATION, ALIGNMENT, AND ELEVATION OF LOGS AND LOGS WITH ROOTWADS ARE SUBJECT TO ADJUSTMENT BASED ON FIELD CONDITIONS AND MATERIAL SIZE.


THE CONTRACTOR SHALL DISPOSE OF NON-NATIVE MATERIAL ENCOUNTERED, IN AN APPROVED, LEGAL OFFSITE DISPOSAL FACILITY.

### QUANTITIES ESTIMATE

				GS	NN, MM, MB	NN	PARKERS BROOK PRELIMINARY DESIGN WORLD WILDLIFE FEDERATION NEWFOUNDLAND AND LABRADOR, CANADA	 220 CONCORD AVENUE, 2ND FLOOR CAMBRIDGE, MA 02138 617.714.5537 <a href="http://www.interfluve.com">www.interfluve.com</a>	GENERAL NOTES	SHEET
				DRAWN	DESIGNED	CHECKED				
				MM	June 1, 2021					
				APPROVED	DATE	PROJECT				
NO	BY	DATE	REVISION DESCRIPTION							
										2 OF 12

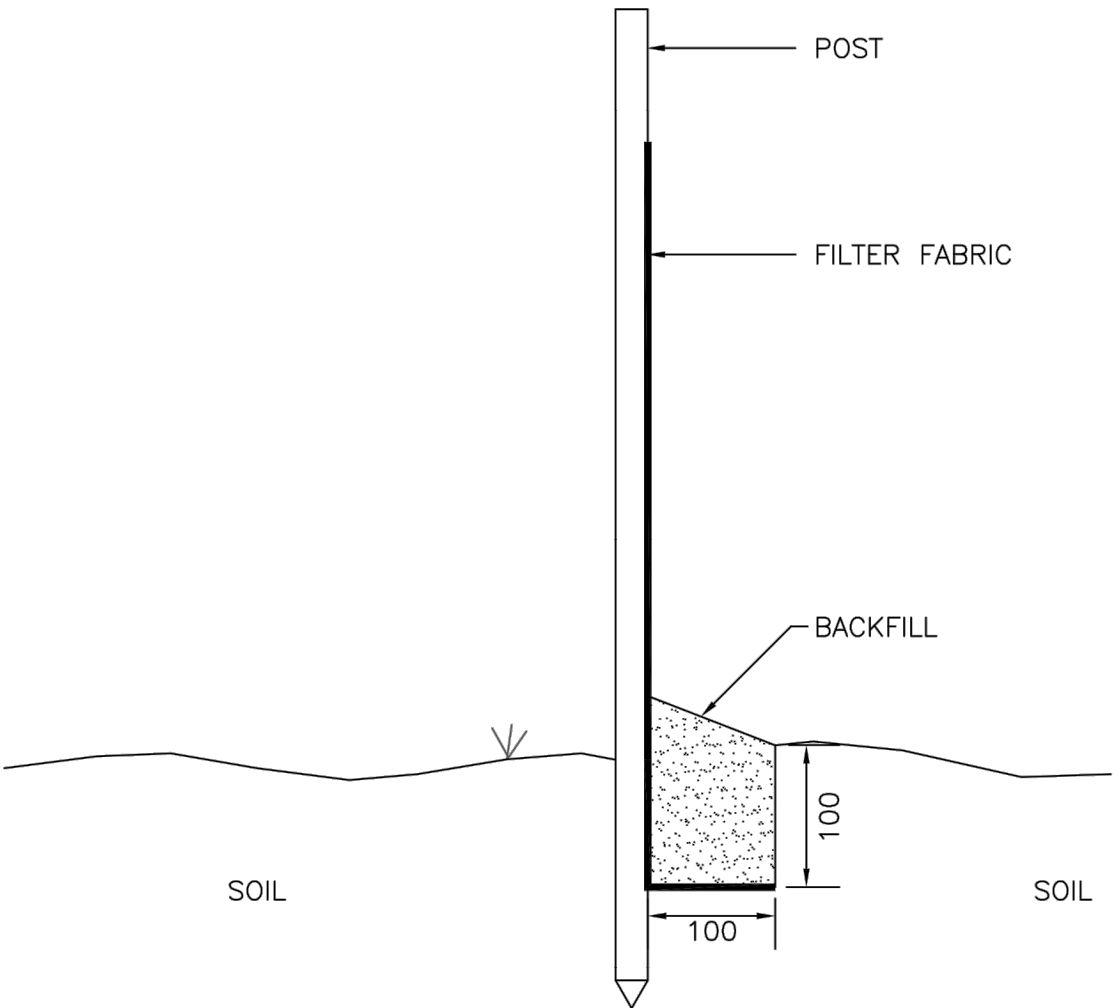




				GS	NN, MM, MB	NN	PARKERS BROOK PRELIMINARY DESIGN WORLD WILDLIFE FEDERATION NEWFOUNDLAND AND LABRADOR, CANADA	 220 CONCORD AVENUE, 2ND FLOOR CAMBRIDGE, MA 02138 617.714.5537 www.interfluve.com	EROSION CONTROL DETAILS	SHEET
				DRAWN	DESIGNED	CHECKED				
				MM	June 1, 2021					
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NO	BY	DATE	REVISION DESCRIPTION							3 OF 12

EROSION CONTROL:

1. PUBLIC RIGHTS OF WAY ARE TO BE KEPT IN A CLEAN AND SERVICEABLE CONDITION AT ALL TIMES. IN THE EVENT MATERIALS ARE INADVERTENTLY DEPOSITED ON ROADWAYS IT SHALL BE REMOVED PROMPTLY. MATERIALS SHALL BE SWEEPED AND REMOVED PRIOR TO ANY STREET FLUSHING. PUBLIC AND PRIVATE DRAINAGE AND WATER WAYS ARE TO BE PROTECTED FROM POLLUTION.
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING EROSION, SEDIMENT, AND POLLUTION CONTROL MEASURES TO COMPLY WITH ALL APPLICABLE REGULATIONS. NOTICE TO PROCEED WILL NOT BE ISSUED UNTIL THE CONTRACTOR OBTAINS AN APPROVED ESC PLAN.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING ALL NECESSARY EROSION CONTROL FACILITIES TO COMPLY WITH APPLICABLE EROSION CONTROL REGULATIONS.
4. THE IMPLEMENTATION OF EROSION, SEDIMENT, AND POLLUTION CONTROL MEASURES AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED, AND VEGETATION IS ESTABLISHED.
5. THE CONTRACTOR SHALL ENSURE THAT MATERIALS FOR EMERGENCY EROSION CONTROL ARE ONSITE, INCLUDING BUT NOT LIMITED TO: SEDIMENT CONTROL MATERIALS (I.E. SILT FENCE, STRAW BALES, STRAW WATTLES, DIRT BAGS); AN OIL–ABSORBING, FLOATING BOOM WHENEVER FLOWING SURFACE WATER IS PRESENT.
6. THE CONTRACTOR SHALL SUBMIT NAME, ADDRESS AND 24–HOUR PHONE NUMBER OF PERSON RESPONSIBLE FOR EROSION PREVENTION AND SEDIMENT CONTROL MEASURES, AND SPILL CONTAINMENT.
7. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN WILL BE FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION BY THE OWNER’S REPRESENTATIVE. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
8. EROSION, SEDIMENT, AND POLLUTION CONTROL MEASURES MUST BE IMPLEMENTED PRIOR TO ANY GROUND DISTURBING ACTIVITY ON THE PROJECT SITE, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT LEAVE THE PROJECT SITE, ENTER THE DRAINAGE SYSTEM OR ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
9. DURING THE CONSTRUCTION PERIOD, EROSION, SEDIMENT, AND POLLUTION CONTROL MEASURES SHALL BE UPGRADED AS NEEDED FOR STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT–LADEN WATER DO NOT LEAVE THE SITE.
10. DURING CONSTRUCTION, THE CONTRACTOR SHALL MONITOR INSTREAM TURBIDITY AND INSPECT ALL EROSION CONTROLS DAILY, OR MORE OFTEN AS NECESSARY, TO ENSURE THE EROSION CONTROLS ARE WORKING ADEQUATELY. IF MONITORING OR INSPECTION SHOWS THAT THE EROSION CONTROLS ARE INEFFECTIVE, MOBILIZE WORK CREWS IMMEDIATELY TO MAKE REPAIRS, INSTALL REPLACEMENTS, OR INSTALL ADDITIONAL CONTROLS AS NECESSARY. THE CONTRACTOR SHALL REMOVE SEDIMENT FROM EROSION CONTROLS ONCE IT HAS REACHED 1/3 OF THE EXPOSED HEIGHT OF THE CONTROL.



INSTALLATION OF GEOTEXTILE SILT FENCE

1. EXCAVATE A 100mm X 100mm TRENCH IN A CRESCENT SHAPE ACROSS THE FLOW PATH WITH ENDS POINTING UPSLOPE.
2. DRIVE STURDY STAKES, SPACED 3000mm APART, INTO THE GROUND ALONG THE DOWNSLOPE SIDE OF THE TRENCH.
3. INSTALL THE FILTER FABRIC FROM A CONTINUOUS ROLL AND CUT TO REQUIRED LENGTH. THE FILTER FABRIC SHOULD BE STAPLED TO THE UPSTREAM SIDE OF THE STAKES, EXTENDING THE BOTTOM 200mm INTO THE TRENCH.
4. BACK FILL AND COMPACT THE SOIL IN THE TRENCH OVER THE FILTER FABRIC.
5. CONTRACTOR TO MAINTAIN FENCE FOR THE DURATION OF THE PROJECT AND REMOVE AT THE COMPLETION OF THE PROJECT.

MUNICIPAL MASTER SPECIFICATIONS

TYPICAL SILT FENCE  
INSTALLATION DETAILS

DRAWING #	SPEC. REFERENCE	DATE:
1260	01560	APRIL 2004

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MM	June 1, 2021	
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EROSION CONTROL DETAILS

SHEET

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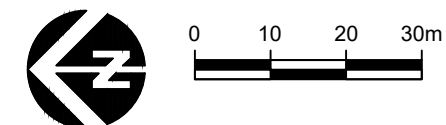




LEGEND

- TEMPORARY ACCESS
- SILT FENCE
- LIMITS OF DISTURBANCE

AERIAL PHOTO: GOOGLE EARTH, OCTOBER, 2012



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EXISTING CONDITIONS

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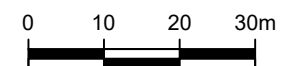




PARKERS BROOK SITE MAP

AERIAL PHOTO: GOOGLE EARTH, OCTOBER, 2012

- LEGEND
- TEMPORARY ACCESS
  - COFFERDAM
  - POOL EXCAVATION
  - LARGE WOOD PLACEMENT
  - FLOODPLAIN BENCH CREATION
  - PROPOSED 0.25m CONTOUR
  - PROPOSED ALIGNMENT
  - SILT FENCE
  - LIMITS OF DISTURBANCE



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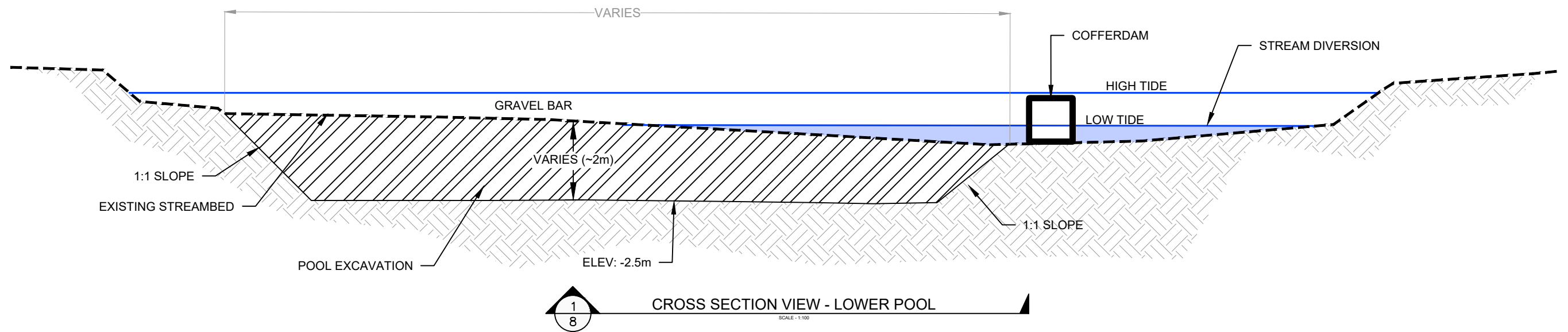
OVERVIEW

SHEET

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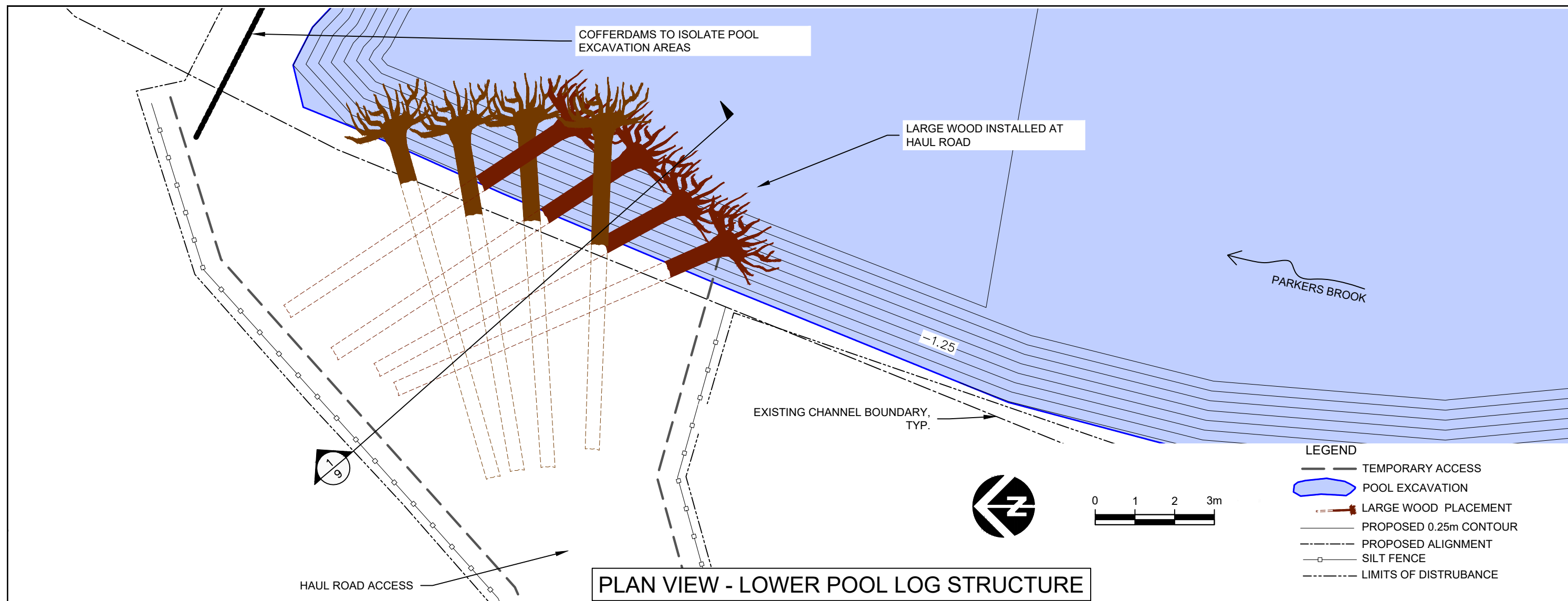
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LOWER POOL TYPICAL SECTION

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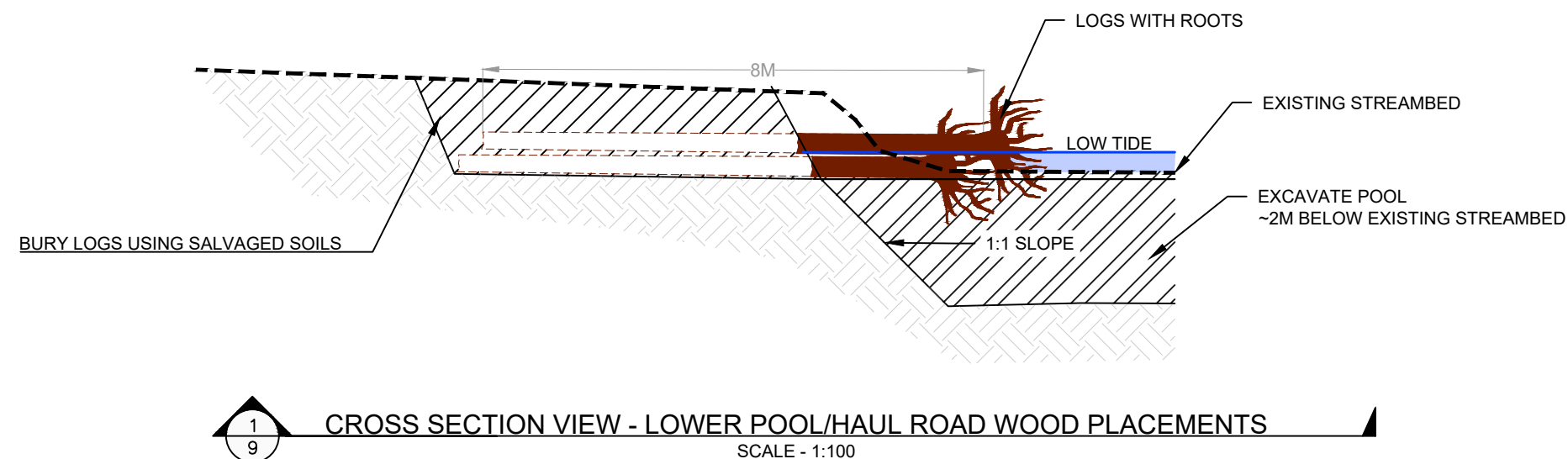
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**NOTES:**

1. MINIMUM OF 1m OF SALVAGED SOIL PLACED ON TOP OF LARGE WOOD.
2. 75% OF LOG LENGTH SHALL BE BURIED IN THE CHANNEL BANK.
3. SEE SPECIFICATIONS FOR LARGE WOOD DIMENSIONS.



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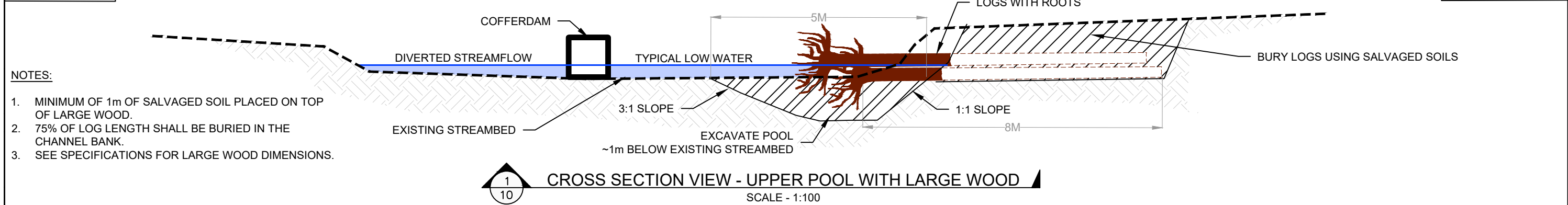
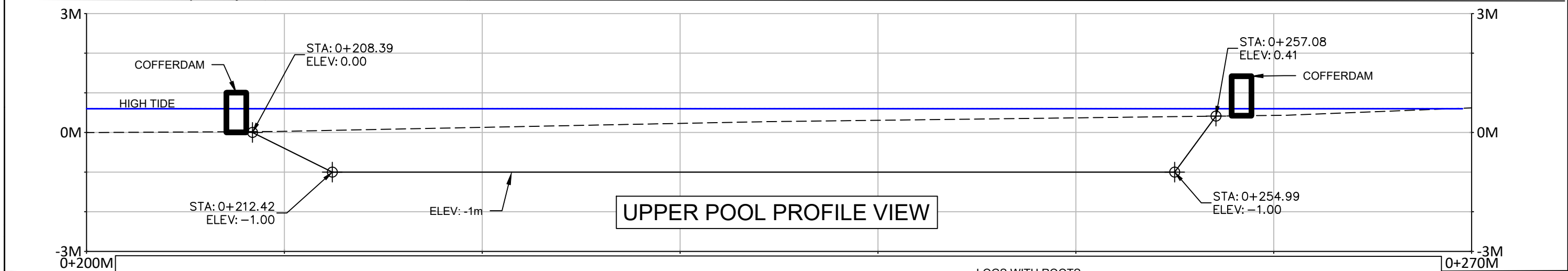
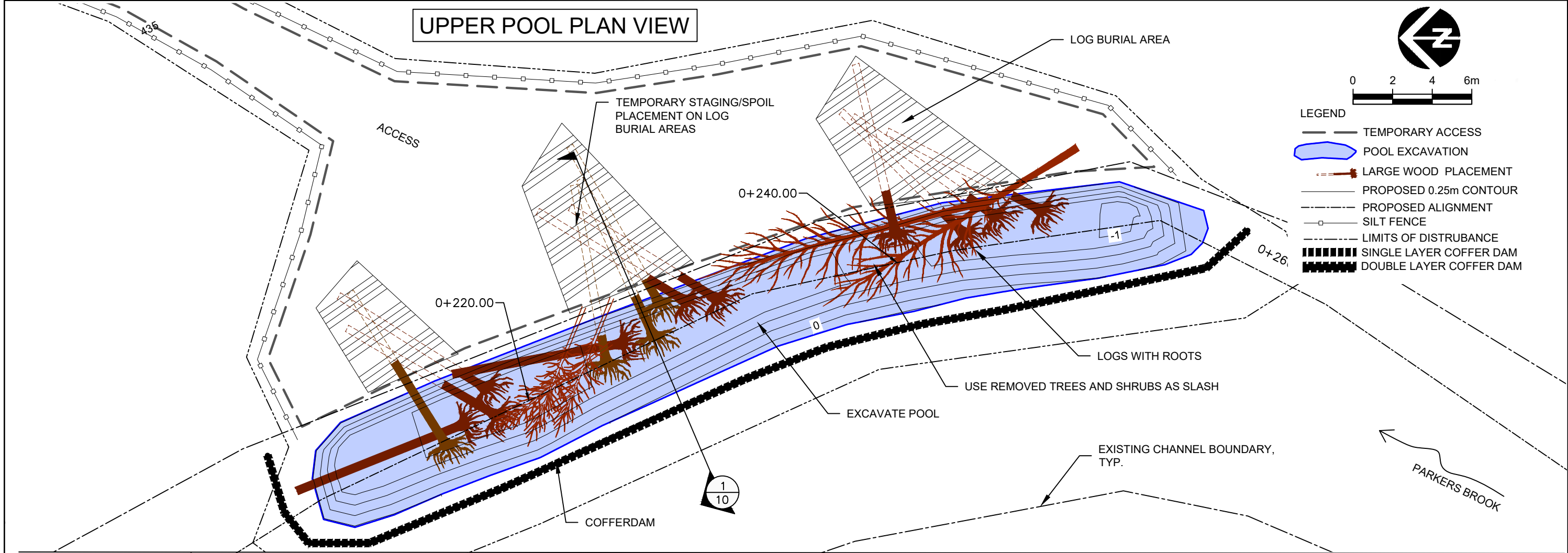
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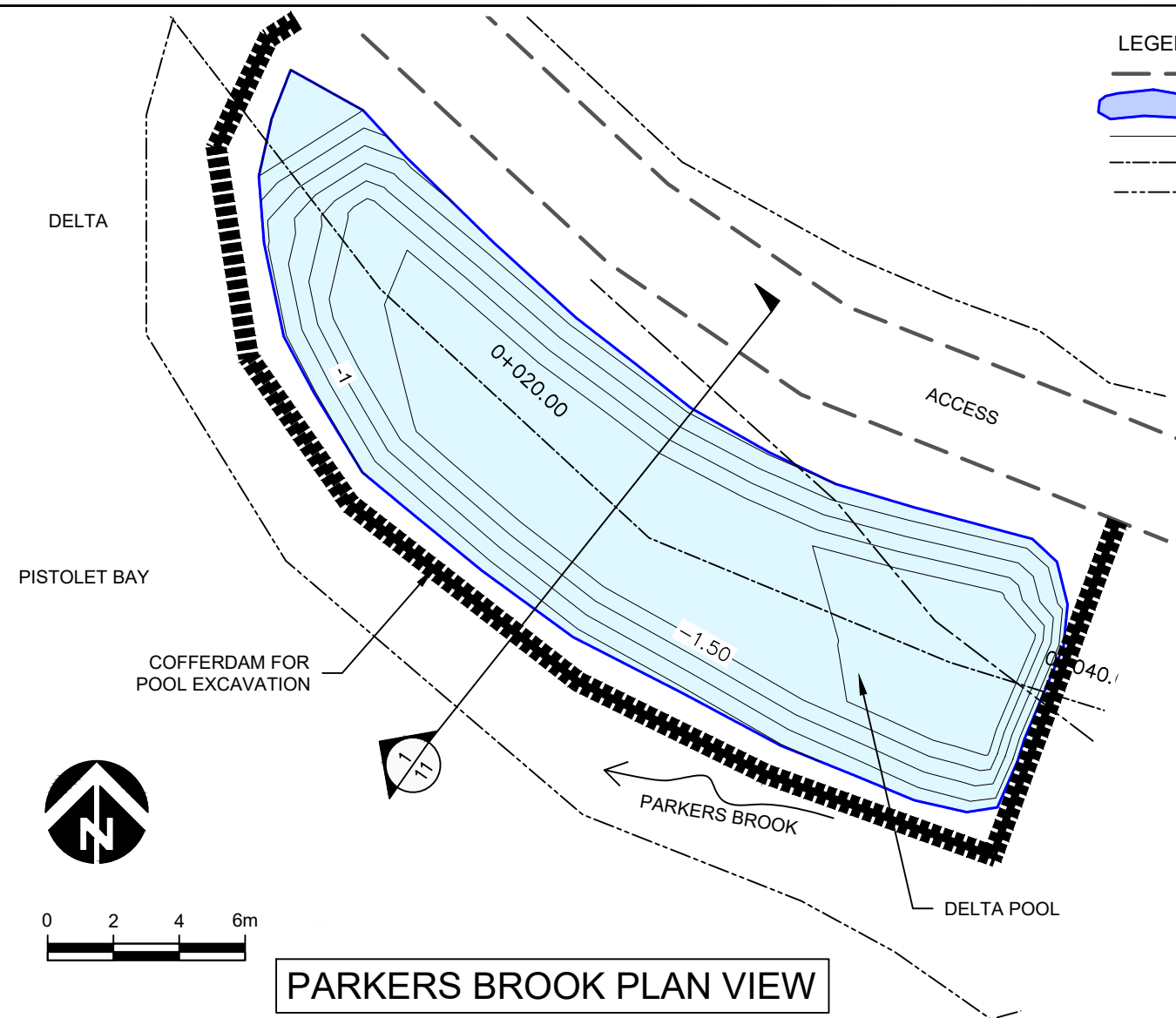
LOWER POOL LARGE WOOD TYPICAL

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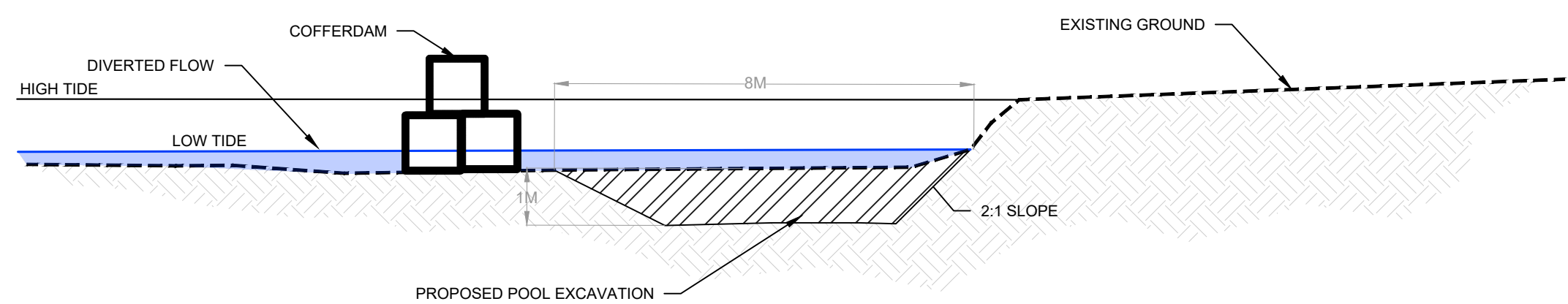
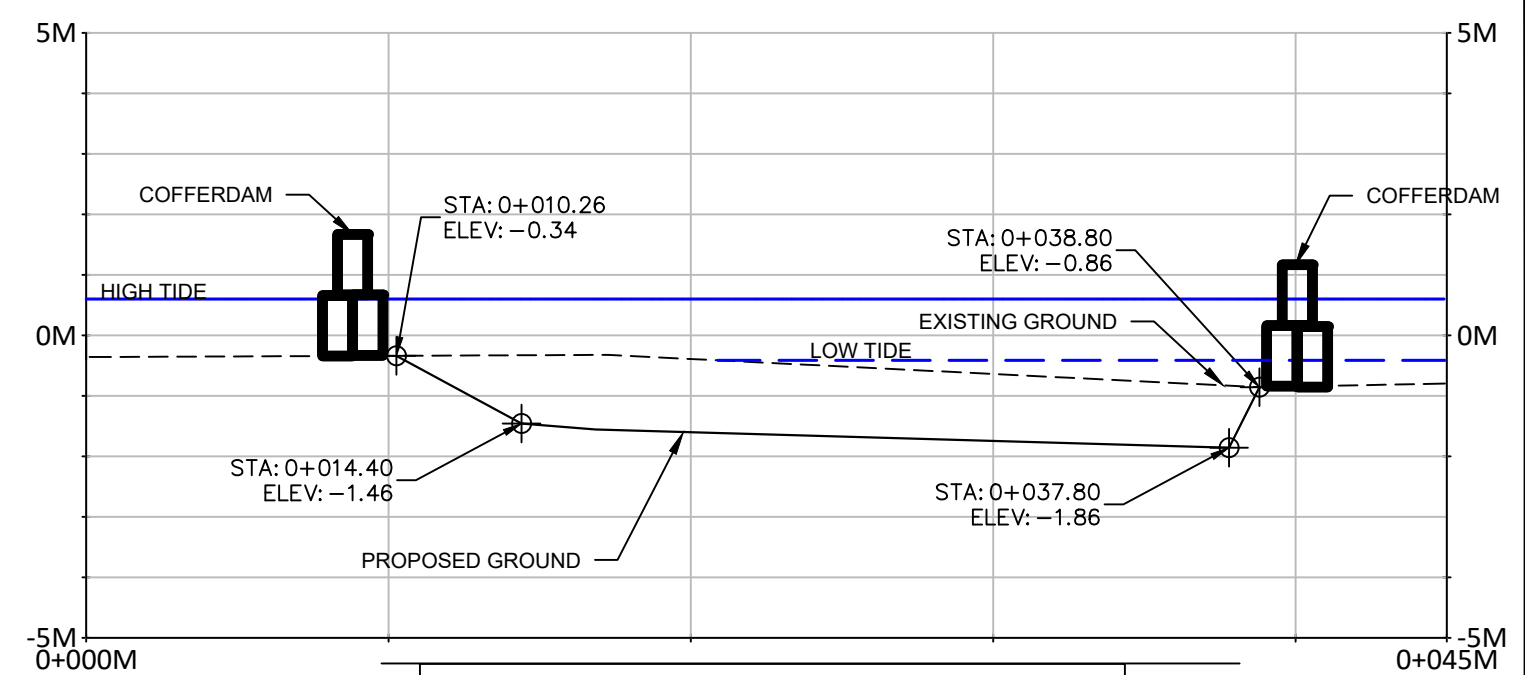


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- LEGEND**
- TEMPORARY ACCESS
  - POOL EXCAVATION
  - PROPOSED 0.25m CONTOUR
  - PROPOSED ALIGNMENT
  - LIMITS OF DISTURBANCE
  - SINGLE LAYER COFFER DAM
  - DOUBLE LAYER COFFER DAM

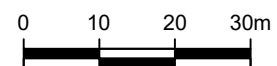






LEGEND

- TEMPORARY ACCESS
- ..... RIPARIAN PLANTING MIX
- XXXXX UPLAND PLANTING MIX



RIPARIAN PLANTING MIX

SHRUBS	RED OSIER DOGWOOD	CORNUS STOLONIFERA
	GRAY DOGWOOD	CORNUS RACEMOSA
	SPECKLED ALDER	ALNUS INCANA
SEED	SALTMARSH SEDGE	CAREX SALINA
	SEASIDE ARROW GRASS	TRIGLOCHIN MARITIMA
	CHAFFY SEDGE	CAREX PALEACEA
	SEA MILKWORT	GLAUX MARITIMA
	NORTHERN BLUE FLAG	IRIS VERSICOLOR

UPLAND PLANTING MIX

TREES	BLACK SPRUCE	PICEA MARIANA
	BALSAM FIR	ABIES BALSAMEA
SHRUBS	LABRADOR TEA	LEDUM GROENLANDICUM
	BLUEBERRY	VACCINIUM ANGUSTIFOLIUM

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REVEGETATION PLAN

SHEET

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