

# COATS MARSH WEIR DECOMMISSIONING

ISSUED FOR TENDER, MAY, 2025

| DRAWING INDEX |  |          |
|---------------|--|----------|
| SHEET No.     | SHEET DESCRIPTION                                      | REVISION |
| 001           | TITLE SHEET, DRAWING INDEX, PROJECT LOCATION AND NOTES | 1        |
| 002           | EXISTING CONDITIONS                                    | 1        |
| 003           | WEIR REMOVAL AND CHANNEL WORKS                         | 1        |
| 004           | BERM INFILLING AND DRAINAGE SWALE                      | 1        |
| 005           | SITE RESTORATION                                       | 1        |
| 006           | HABITAT CHANNELS (PROVISIONAL)                         | 1        |



IMAGE SOURCE: RDN, 2022

NOTES

1. GENERAL
- 1.1. THESE DRAWINGS REPRESENT THE NATURE AND GENERAL LAYOUT OF THE PROPOSED WORKS AND NOT NECESSARILY THE WORKS EXACTLY AS THEY WILL BE CARRIED OUT.
- 1.2. THESE DRAWINGS SHALL BE READ AND INTERPRETED SIMULTANEOUSLY WITH THE PROJECT TECHNICAL SPECIFICATIONS.
2. SURVEY AND DIMENSIONS
- 2.1. ALL ELEVATIONS AND DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
- 2.2. TOPOGRAPHIC DATA IS DERIVED FROM THE FOLLOWING SOURCES:

2024 RTK-GPS SURVEY BY 3D GEOMATICS LTD.

2022 TOTAL STATION AND RTK-GPS SURVEY BY NHC

2019 TOPOGRAPHIC LIDAR DATA FROM GEO-BC

2010 LIMITED BATHYMETRIC SURVEY FROM RDN
- 2.3. ELEVATIONS AND HORIZONTAL LOCATIONS ARE BASED ON THE FOLLOWING COORDINATE SYSTEM:

HORIZONTAL DATUM: NAD83(CSR5)

VERTICAL DATUM: CGVD2013, GEOID: CGG2013a

PROJECTION: UTM ZONE 10N
- 2.4. QUANTITIES SHOWN ARE NEAT-LINE VOLUME AND AREA ESTIMATES.
3. DESIGN
- 3.1. CIVIL AND HYDROTECHNICAL ENGINEERING DESIGN COMPLETED BY NORTHWEST HYDRAULIC CONSULTANTS LTD.
- 3.2. PLANTING PLAN PREPARED BY ENVIRONMENTAL DYNAMICS INC.
- 3.3. THE DESIGN INTENT IS TO DECOMMISSION THE EXISTING COATS MARSH WEIR SUCH THAT THERE IS NO MAN-MADE WATER IMPOUNDMENT ABOVE THE NATURAL BASE ELEVATION OF THE MARSH, ESTIMATED AS APPROXIMATELY 95 m.
4. MATERIALS
- 4.1. TABLE 1 INCLUDES A SCHEDULE OF QUANTITIES AND MATERIALS FOR EARTHWORKS AND CONCRETE.
- 4.2. CONCRETE MIXES SHALL MEET THE SPECIFICATIONS PROVIDED IN TABLE 2.

| TABLE 1: MATERIAL QUANTITIES FOR EARTHWORK AND CONCRETE |                |
|---|----------------|
| MATERIAL  | QUANTITY (m³)  |
| COMMON EXCAVATION                                       | 380            |
| ROCK EXCAVATION   | 7              |
| EXISTING CONCRETE REMOVAL                               | 4              |
| REINFORCED CONCRETE                                     | 6              |
| GRANULAR FILL   | 300            |
| TOPSOIL   | 200            |
| MANURE  | 9.2 (12 YARDS) |
| CRUSHED GRAVEL  | 4              |

| TABLE 2: CONCRETE MIX SPECIFICATIONS       |               |
|--|---------------|
| SPECIFICATIONS                             | DESCRIPTION   |
| 28-DAY STRENGTH                            | 30 MPa        |
| EXPOSURE CLASS                             | F-1           |
| MAXIMUM AGGREGATE SIZE                     | 20 mm         |
| MAXIMUM WATER TO CEMENTING MATERIALS RATIO | 0.5           |
| AIR CONTENT                                | 5% - 8%       |
| SLUMP                                      | 80 mm ± 30 mm |



IMAGE SOURCE: GOOGLE EARTH; 19th AUGUST, 2016

LOCATION MAP  
SCALE = 1:100,000

SITE MAP  
SCALE = 1:5,000

|  |      |             |                   |
|--|------|-------------|-------------------|
| CLIENT: <div>REGIONAL DISTRICT OF NANAIMO</div> <div>6300 HAMMOND BAY ROAD</div> <div>NANAIMO, BC</div> <div>V9T 6N2</div> <div></div> | REV. | DATE        | DESCRIPTION       |
|  | 0    | 18 MAR 2025 | ISSUED FOR REVIEW |
|  | 1    | 9 MAY 2025  | ISSUED FOR TENDER |
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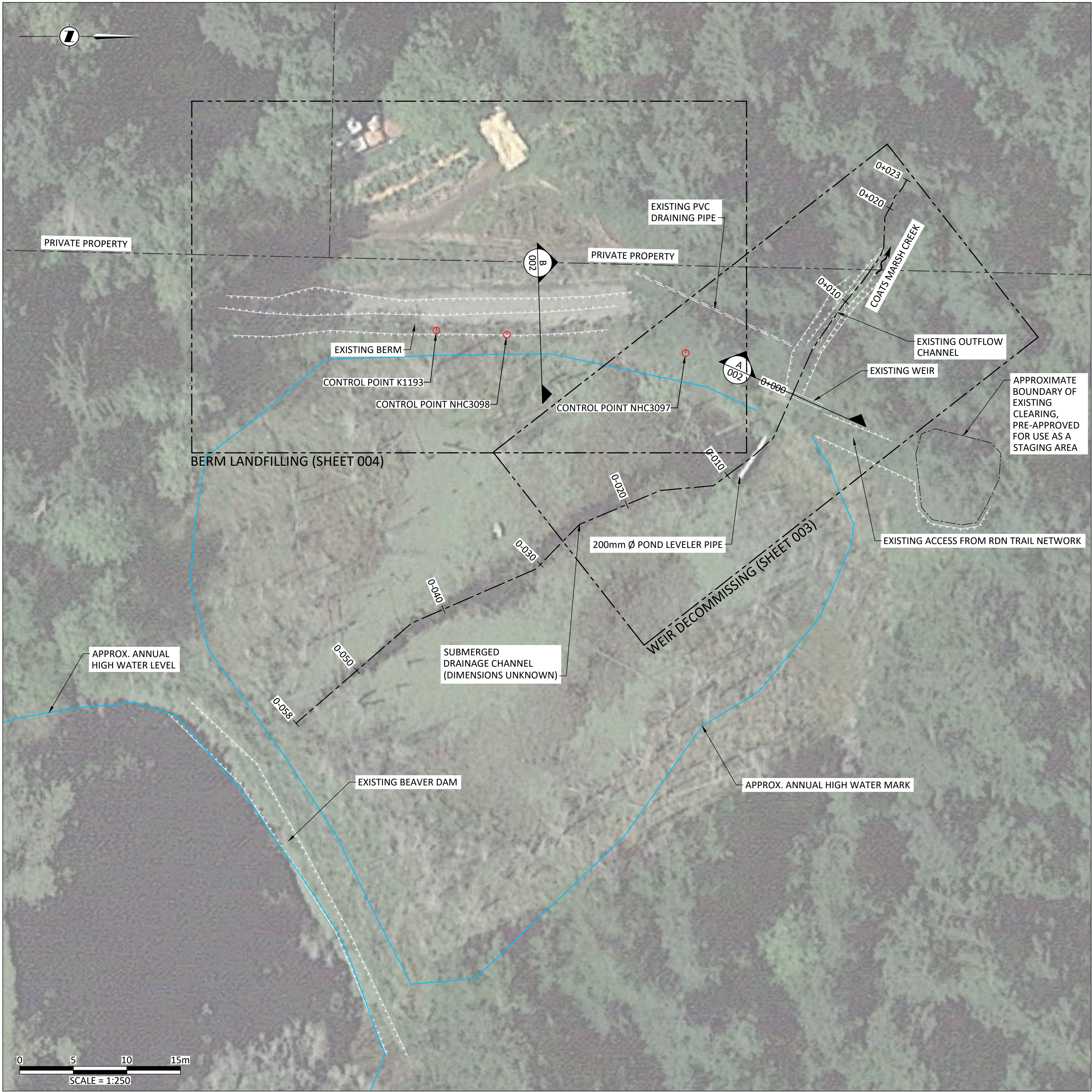
COATS MARSH WEIR DECOMMISSIONING

TITLE SHEET, DRAWING INDEX, PROJECT LOCATION AND NOTES

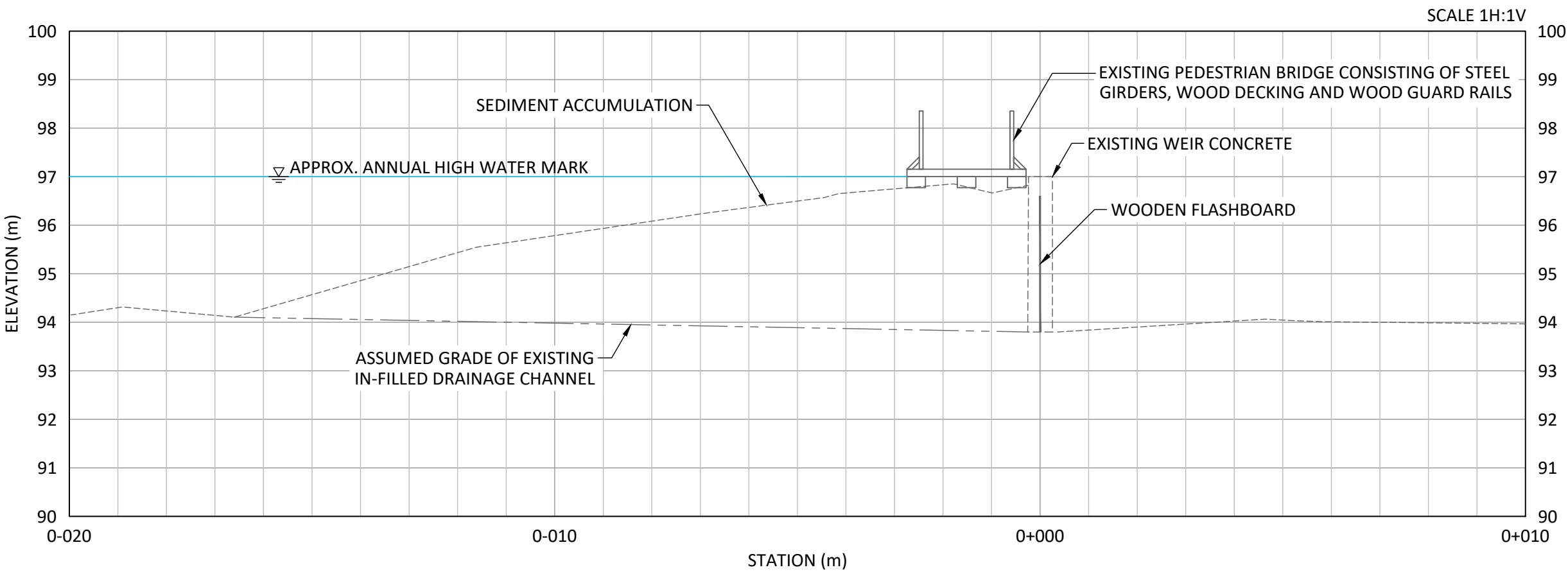
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| DESIGNED: E. ARBUCKLE  | SHEET ID: 3008511-04-IFT-CM_WEIR_DECOMM-R1-001 R1 | SHEET No:<br><b>001</b> |
| DRAFTED: R. CLARK      | STATUS: ISSUED FOR TENDER                         |                         |
| CHECKED: N. VALSANGKAR | SCALE: AS SHOWN WHEN PLOTTED D SIZE               | REV No: R1              |
| APPROVED: G. HILL      | DATE: 9 MAY 2025                                  |                         |



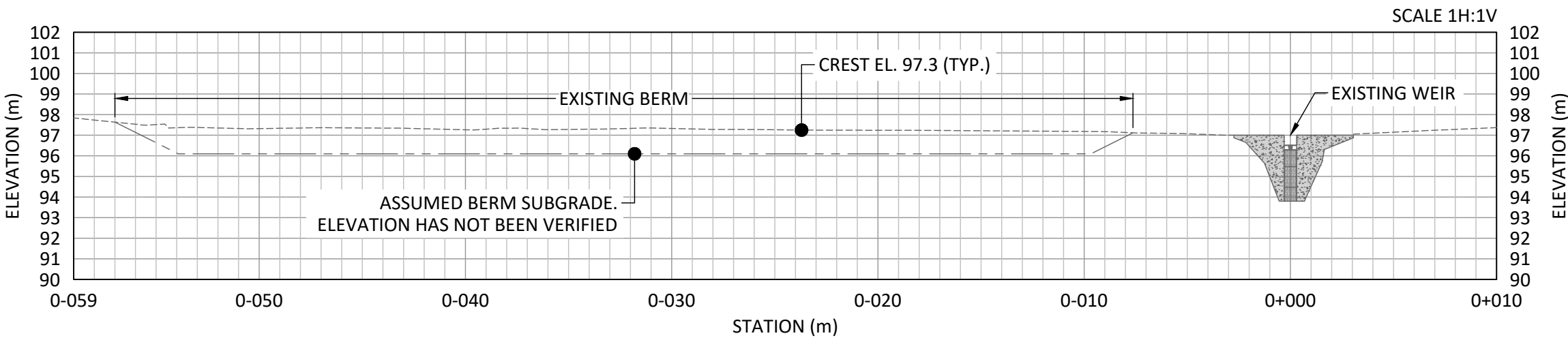
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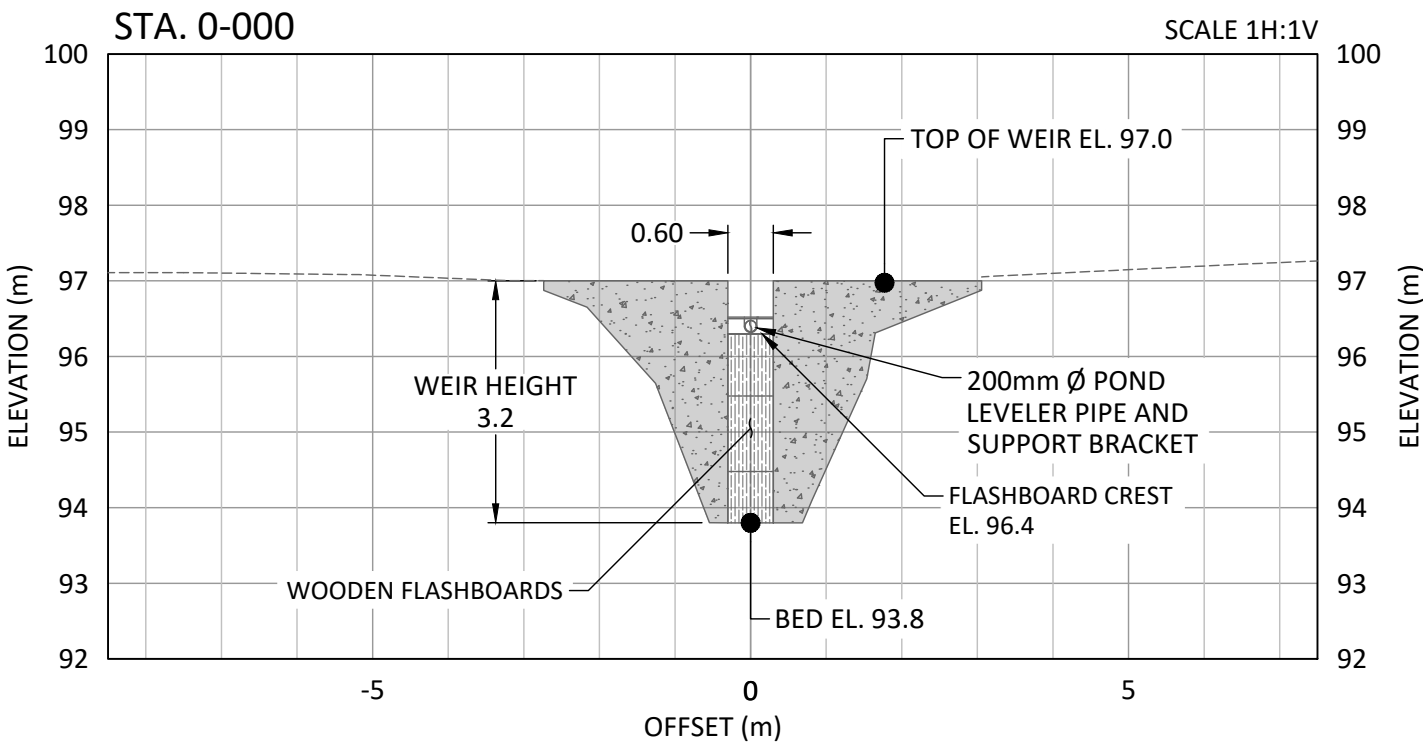
PLAN VIEW - EXISTING CONDITIONS  
SCALE = 1:250



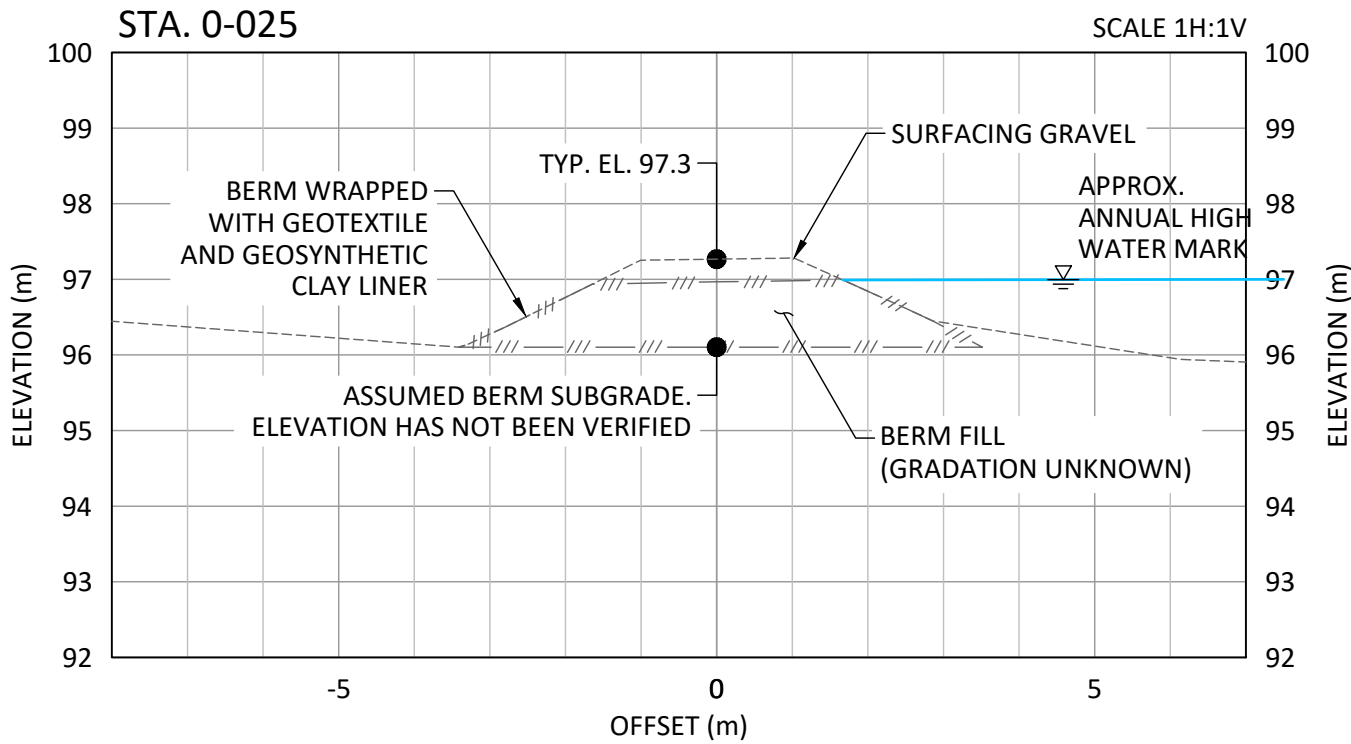
PROFILE VIEW - EXISTING CHANNEL AND WEIR  
SCALE = 1:250



PROFILE VIEW - EXISTING BERM AND WEIR  
SCALE = 1:250



TYPICAL SECTION A - EXISTING WEIR  
SCALE = 1:100



TYPICAL SECTION B - EXISTING BERM  
SCALE = 1:100

| CONTROL POINT TABLE |             |             |              |               |
|---------------------|-------------|-------------|--------------|---------------|
| POINT #             | DESCRIPTION | EASTING (m) | NORTHING (m) | ELEVATION (m) |
| 1                   | NHC3097     | 440528.517  | 5444722.215  | 97.315        |
| 2                   | NHC3098     | 440526.800  | 5444705.526  | 97.430        |
| 3                   | K1193       | 440526.405  | 5444698.956  | 98.980        |

LEGEND:

- EXISTING CONCRETE
- FLASHBOARD
- EXISTING GROUND
- EXISTING TOP OF SLOPE
- EXISTING BOTTOM OF SLOPE
- EXISTING PIPE
- EXISTING GEOTEXTILE
- ASSUMED EXISTING WATER LEVEL
- ASSUMED SUBGRADE

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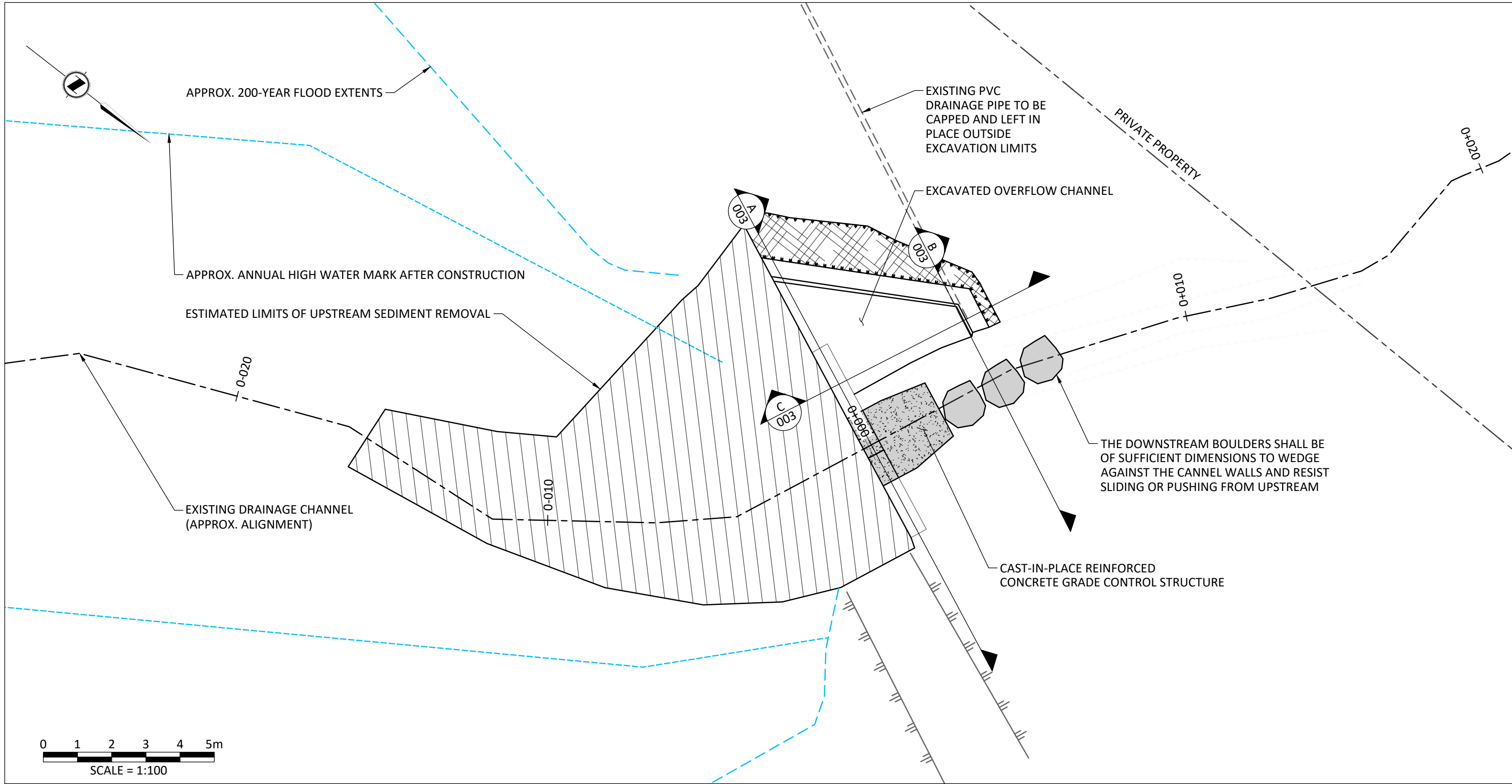
COATS MARSH WEIR DECOMMISSIONING

EXISTING CONDITIONS

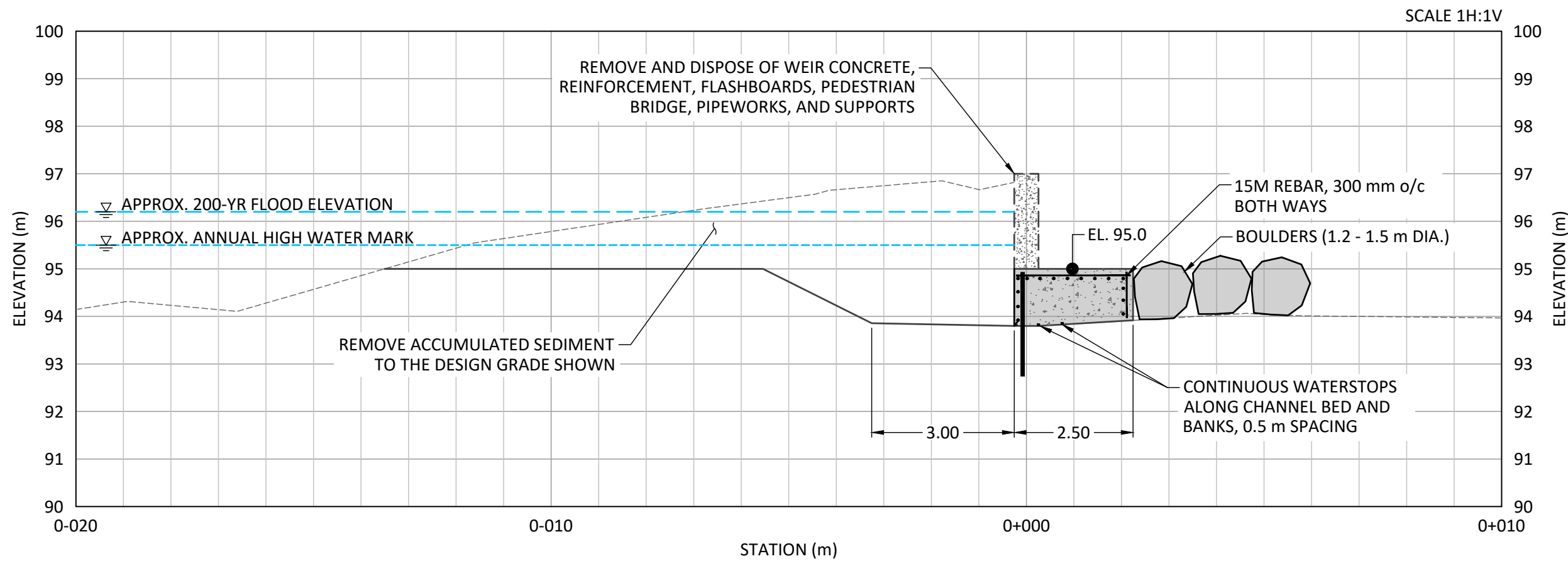
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| DRAFTED: R. CLARK      | STATUS: ISSUED FOR TENDER                         | 002        |
| CHECKED: N. VALSANGKAR | SCALE: AS SHOWN WHEN PLOTTED D SIZE               |            |
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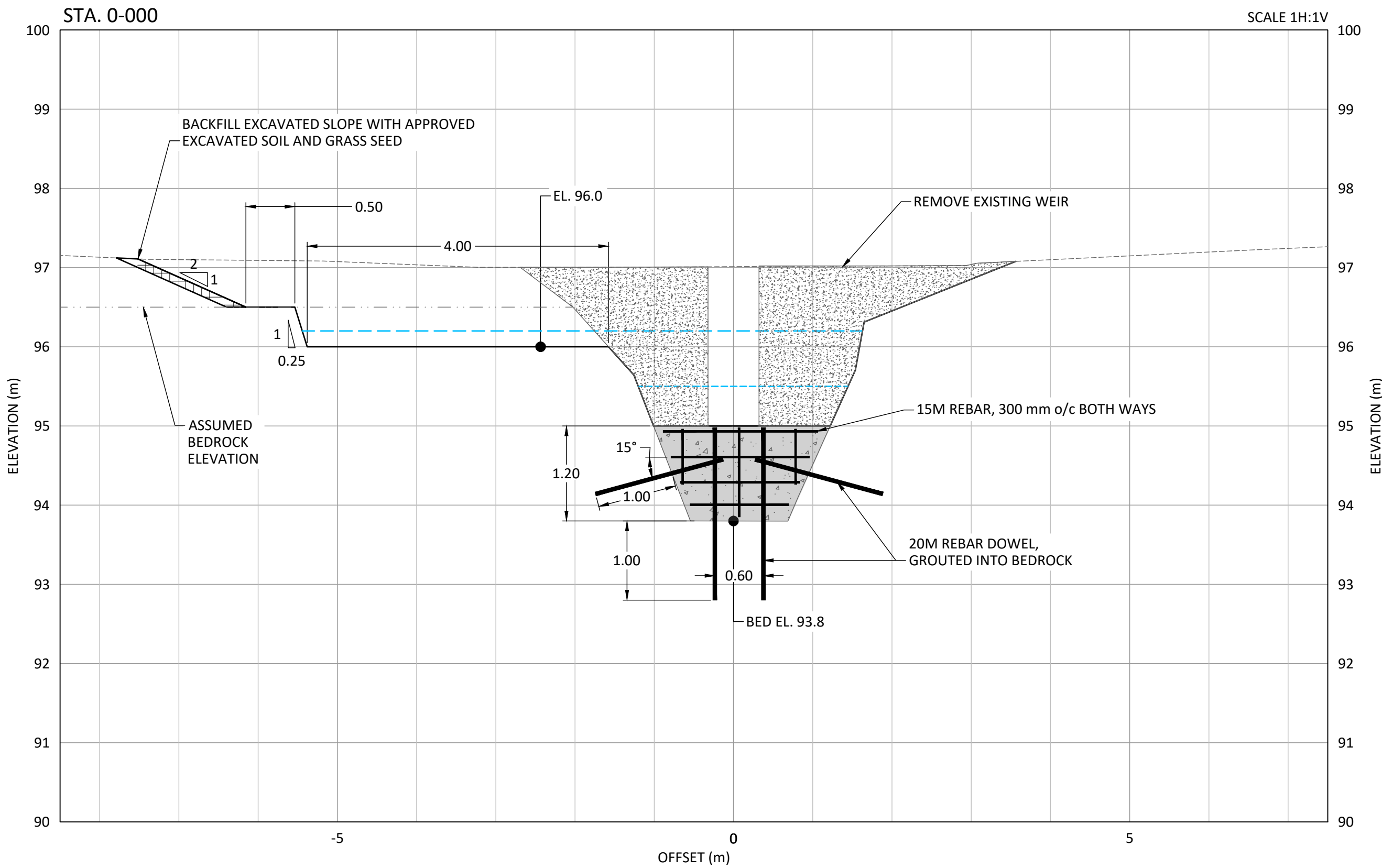
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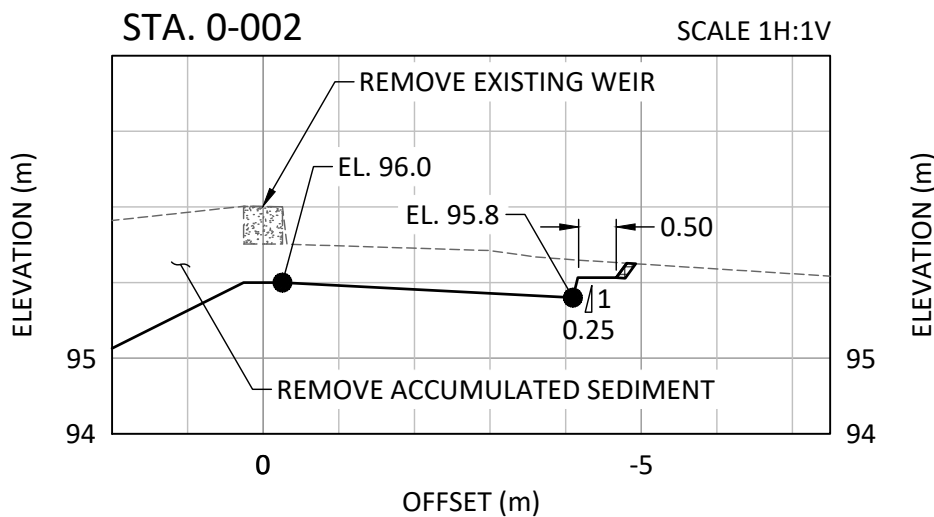
PLAN VIEW - WEIR DECOMMISSIONING AND GRADE CONTROL STRUCTURE  
SCALE = 1:100



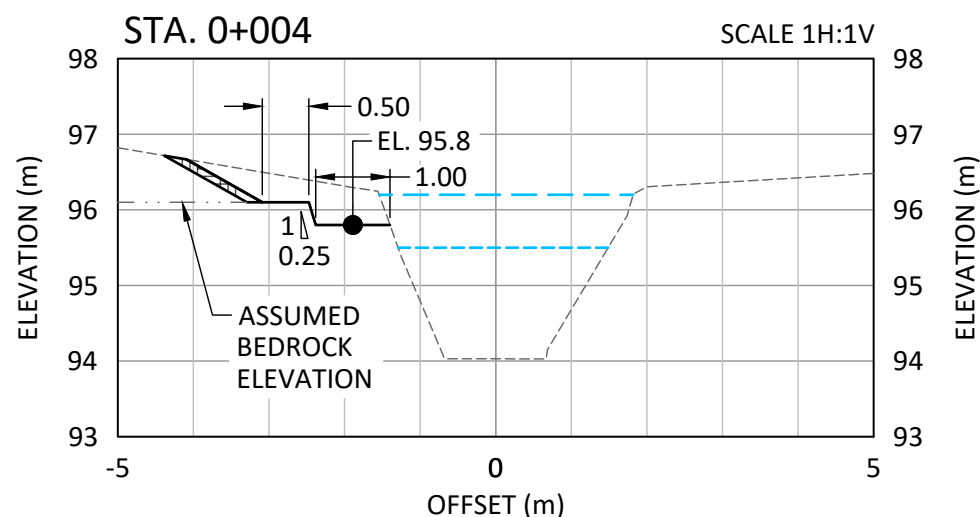
PROFILE VIEW - WEIR DECOMMISSIONING AND GRADE CONTROL STRUCTURE  
SCALE = 1:100



TYPICAL SECTION A - WEIR DECOMMISSIONING AND OVERFLOW CHANNEL  
SCALE = 1:50



TYPICAL SECTION C - OVERFLOW CHANNEL  
SCALE = 1:100




TYPICAL SECTION B - OVERFLOW CHANNEL (DOWNSTREAM)  
SCALE = 1:100

| LEGEND: |                                  |
|---------|----------------------------------|
|         | EXISTING GROUND                  |
|         | EXISTING TOP OF SLOPE            |
|         | EXISTING BOTTOM OF SLOPE         |
|         | PROPOSED GRADE                   |
|         | PROPOSED TOP OF SLOPE            |
|         | PROPOSED BOTTOM OF SLOPE         |
|         | EXISTING CONCRETE                |
|         | PROPOSED CONCRETE                |
|         | PROPOSED SEDIMENT REMOVAL        |
|         | PROPOSED BACKFILL AND GRASS SEED |
|         | APPROX. 200-YR FLOOD EL.         |
|         | APPROX. HWM AFTER CONSTRUCTION   |

CLIENT:

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REGIONAL  
DISTRICT  
OF NANAIMO

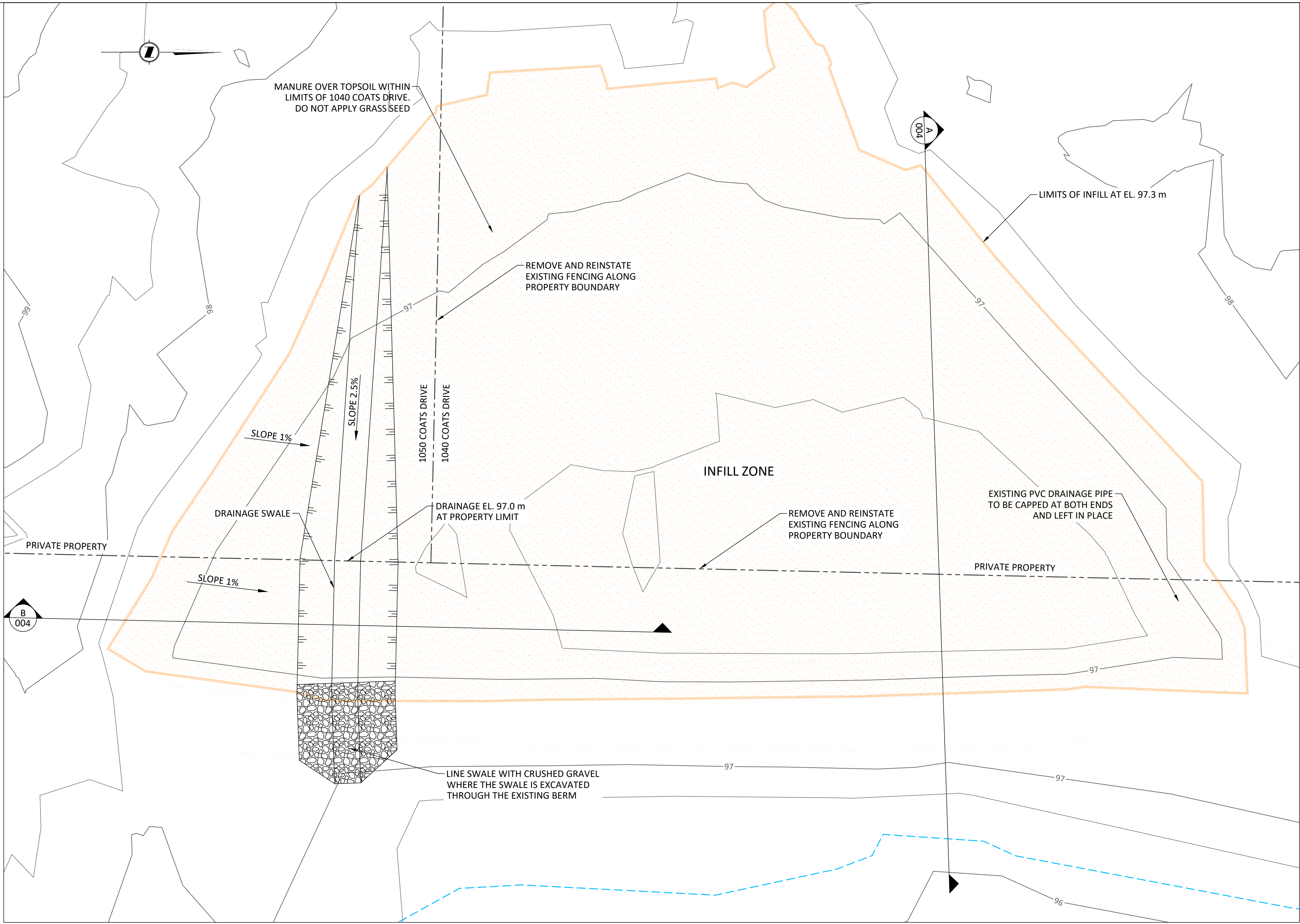
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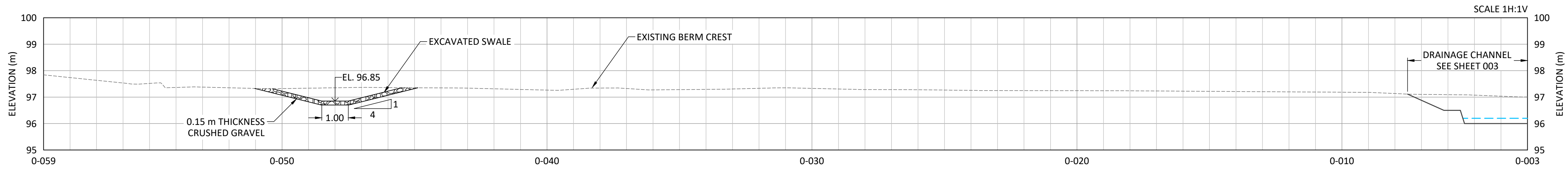
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| COATS MARSH WEIR DECOMMISSIONING       |   |                      |
| WEIR DECOMMISSIONING AND CHANNEL WORKS |   |                      |
| DESIGNED: E. ARBUCKLE                  | SHEET ID: 3008511-04-IFT-CM_WEIR_DECOMM-R1-003 R1 | SHEET No:<br><br>003 |
| DRAFTED: R. CLARK                      | STATUS: ISSUED FOR TENDER                         |                      |
| CHECKED: N. VALSANGKAR                 | SCALE: AS SHOWN WHEN PLOTTED D SIZE               |                      |
| APPROVED: G. HILL                      | DATE: 9 MAY 2025                                  | REV No: R1           |



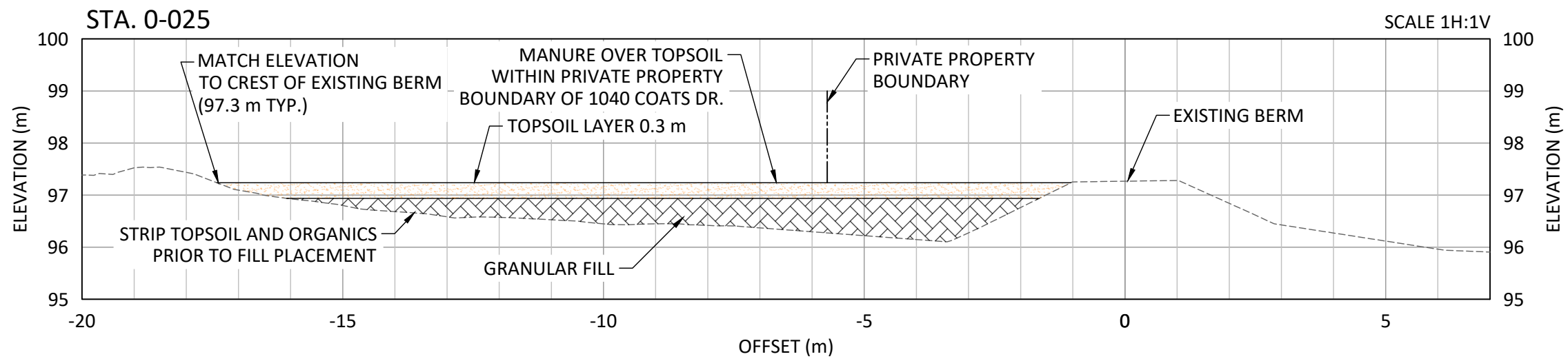
FILENAME: \\mainfile-nan\Projects\Active\3008511 Coats Marsh Weir Decommissioning\96 CAD\2 Production\02\_FIG\3008511-04-IFT-CM\_WEIR\_DECOMM-R1.dwg, 09 May 2025, 04:27 PM



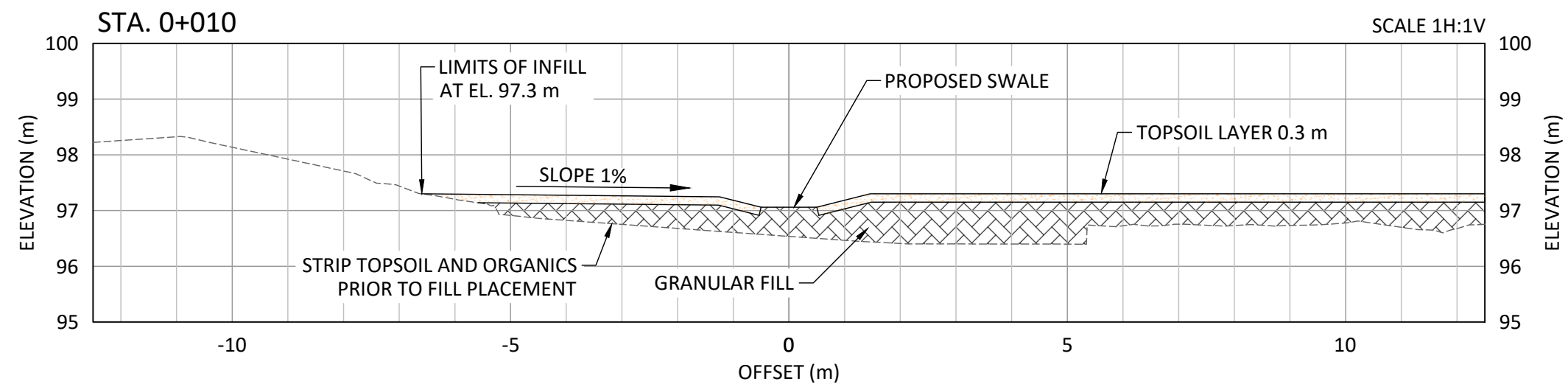
PLAN VIEW - PROPOSED FILL  
SCALE = 1:100



PROFILE VIEW - BERM ALIGNMENT  
SCALE = 1:100



TYPICAL SECTION A – PROPOSED INFILL ZONE  
SCALE = 1:100



TYPICAL SECTION B – PROPOSED SWALE  
SCALE = 1:100

- LEGEND:**
- EXISTING GROUND
  - ... EXISTING TOP OF SLOPE
  - - - EXISTING BOTTOM OF SLOPE
  - ASSUMED SUBGRADE
  - EXISTING PIPE
  - PROPOSED GRADE
  - [Pattern] PROPOSED GRANULAR FILL
  - [Pattern] PROPOSED TOPSOIL LAYER
  - [Pattern] PROPOSED CRUSHED GRAVEL
  - APPROX. 200-YR FLOOD EL.
  - APPROX. HWM AFTER CONSTRUCTION

CLIENT:

REGIONAL DISTRICT OF NANAIMO  
6300 HAMMOND BAY ROAD  
NANAIMO, BC  
V9T 6N2



REV. DATE  
0 18 MAR 2025  
1 9 MAY 2025

DESCRIPTION  
ISSUED FOR REVIEW  
ISSUED FOR TENDER

**nhc**  
northwest  
hydraulic  
consultants

SEAL:

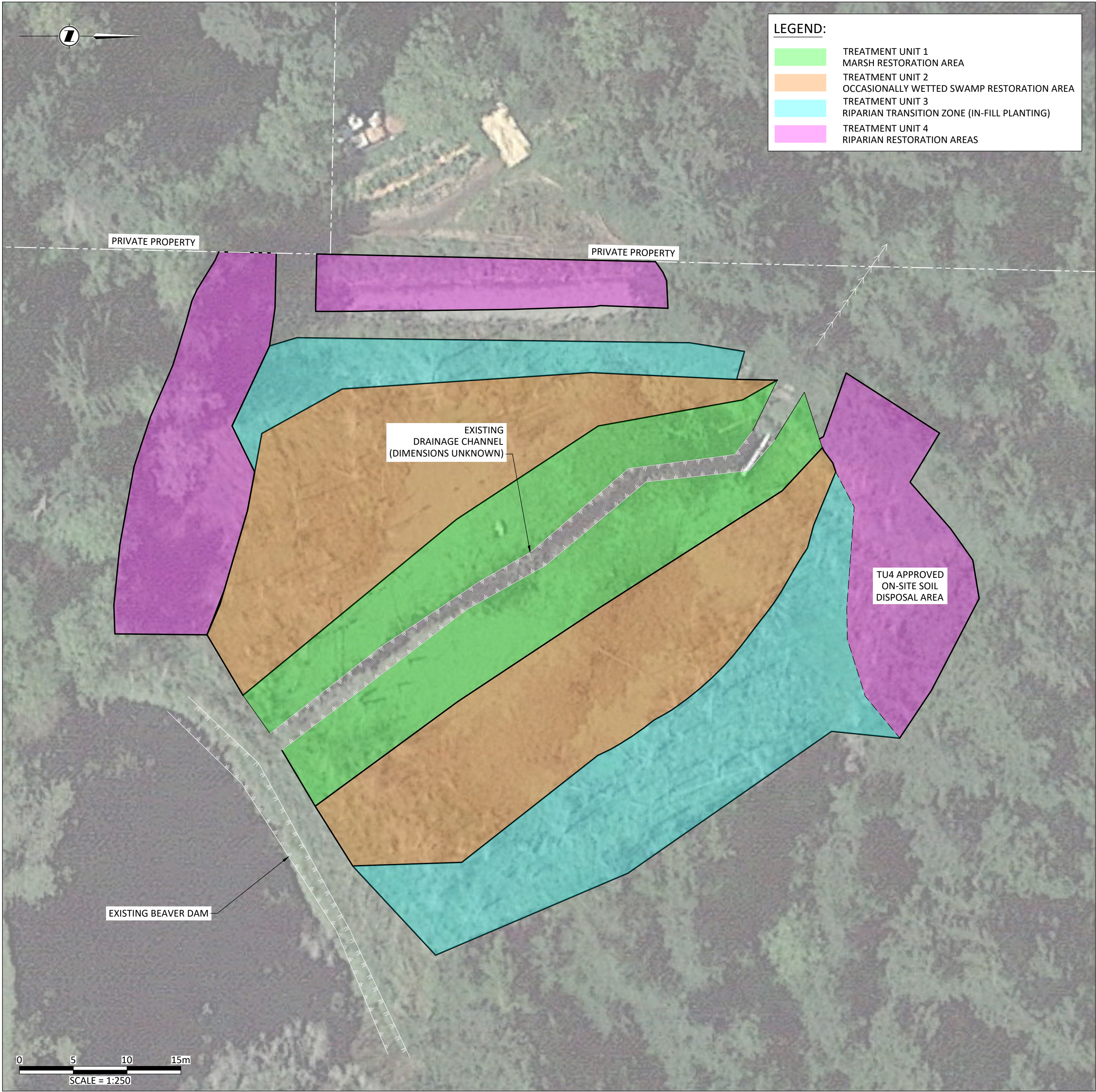
## COATS MARSH WEIR DECOMMISSIONING

### BERM INFILLING AND DRAINAGE SWALE

|                        |   |            |
|------------------------|---|------------|
| DESIGNED: E. ARBUCKLE  | SHEET ID: 3008511-04-IFT-CM_WEIR_DECOMM-R1-004 R1 | SHEET No:  |
| DRAFTED: R. CLARK      | STATUS: ISSUED FOR TENDER                         | 004        |
| CHECKED: N. VALSANGKAR | SCALE: AS SHOWN WHEN PLOTTED D SIZE               |            |
| APPROVED: G. HILL      | DATE: 9 MAY 2025                                  | REV No: R1 |



FILENAME: \\mainfile-nan\Projects\Active\3008511 Coats Marsh Weir Decommissioning\96 CAD\2 Production\02\_FIG\3008511-04-IFT-CM\_WEIR\_DECOMM-R1.dwg, 09 May 2025, 04:27 PM



PLAN VIEW - PROPOSED RESTORATION  
SCALE = 1:250

| PLANT QUANTITIES |                          |                |              |                |              |              |       |
|------------------|--------------------------|----------------|--------------|----------------|--------------|--------------|-------|
| TREES            |                          | CONTAINER SIZE | TU1 (627 m²) | TU2 (1,125 m²) | TU3 (257 m²) | TU4 (750 m²) | TOTAL |
| Red alder        | Alnus rubra              | 2-GAL          | 0            | 0              | 32           | 139          | 171   |
| Western redcedar | Thuja plicata            | 2-GAL          | 0            | 0              | 0            | 48           | 48    |
| Pacific willow   | Salix lucida             | LIVESTAKE      | 0            | 1686           | 0            | 0            | 1686  |
| SHRUBS           |                          |                |              |                |              |              |       |
| Hardhack         | Spiraea douglasii        | 2-GAL          | 0            | 0              | 64           | 0            | 64    |
| Osoberry         | Oemleria cerasiformis    | 2-GAL          | 0            | 0              | 32           | 240          | 272   |
| Salal            | Gaultheria shallon       | 1-GAL          | 0            | 0              | 32           | 434          | 466   |
| Red elderberry   | Sambucus racemosa        | 2-GAL          | 0            | 0              | 0            | 76           | 76    |
| GROUNDCOVER      |                          |                |              |                |              |              |       |
| Bluejoint        | Calamagrostis canadensis | PLUG/CONTAINER | 0            | 0              | 193          | 0            | 193   |
| Cattail          | Typha latifolia          | PLUG/CONTAINER | 627          | 0              | 0            | 0            | 627   |
| TOTAL PLANTS     |                          |                | 627          | 1686           | 353          | 937          | 3603  |

| TREATMENT UNIT ELEVATION RANGES |         |                 |                 |         |
|---------------------------------|---------|-----------------|-----------------|---------|
|                                 | TU1     | TU2             | TU3             | TU4     |
| RANGE                           | <95.5 m | 95.5 m - 96.2 m | 96.2 m - 96.5 m | >96.5 m |

NOTES:

- FINAL PLANT QUANTITIES MAY BE ADJUSTED FOLLOWING THE ENGINEER'S REVIEW OF SITE CONDITIONS POST-DEWATERING. ADJUSTMENTS MAY INCREASE OR DECREASE THE QUANTITIES FROM THOSE SHOWN.
- PLANTING SHALL BE COMPLETED IN OCTOBER AFTER THE DROUGHT SEASON TO INCREASE SURVIVAL RATES.
- CATTAILS SHALL BE PLANTED IN CLUSTERS OF 5-10 PLANTS. BLUEJOINT SHALL BE PLANTED AS A SPARSE IN-FILL LAYER ACROSS THE ENTIRE TREATMENT UNIT. REMAINING SHRUBS AND TREES SHALL BE PLANTED IN CLUSTERS WITH NUMBERS AND SPACING AS RECOMMENDED BY THE BIOLOGIST.
- INSTALL FENCING, VOLE GUARDS, OR AN APPROVED ALTERNATIVE AROUND ALL PLANTINGS TO PROTECT AGAINST BEAVER BROWSING. ALL PROTECTIONS SHALL HAVE A 1 cm MESH SIZE OR SMALLER. FENCING SHALL BE AT LEAST 1 m TALL. VOLE GUARDS USED ON LIVE STAKES SHALL BE AT LEAST 0.3 m TALL.
- FOR TU4, APPLY AN APPROVED TOPSOIL AMENDMENT PRIOR TO PLANTING TREES. FOR TU3 AND TU4, APPLY AN APPROVED MULCH AROUND PLANTING WHERE DIRECTED BY THE BIOLOGIST. MULCH SHALL BE 1-10 cm THICKNESS.
- REMOVE COMPETING INVASIVES, SUCH AS REED CANARY GRASS, FROM THE TREATMENT UNITS PRIOR TO PLANTING, OTHER THAN IN AREAS WHERE THEY WILL BE COVERED BY ON-SITE SOIL DISPOSAL.
- ON-SITE DISPOSAL
  - EXCAVATED SOIL DISPOSAL SHALL ONLY OCCUR IN THE DESIGNATED AREAS INDICATED ON THE DRAWINGS AND APPROVED BY THE BIOLOGIST. THE MINIMUM THICKNESS OF PLACED SOIL SHALL BE 0.5 M. ALLOW SOIL TO SETTLE OR COMPACT BY LIGHT ROLLING SUCH THAT IT IS FIRM AGAINST FOOTPRINTS. DO NOT COMPACT THE SOIL MORE THAN IS NECESSARY TO MEET THIS REQUIREMENT.
  - WHERE EXCAVATED SOIL DISPOSAL IS USED TO COVER EXISTING REED CANARY GRASS, THE GRASS SHALL BE FLATTENED BY TRAMPLING OR OTHER APPROVED METHOD. GRASS SHALL BE COVERED WITH 2 LAYERS OF APPROVED CLEAN, NON-PLASTICIZED, CARDBOARD OR AN APPROVED BIODEGRADABLE GROUND SHEETING WHICH IS WEIGHTED WITH ROCKS OR SECURED WITH WOODEN STAKES. OVERLAP ALL COVERING JOINTS BY AT LEAST 0.3 M. PLACE SOIL OVER SHEETING
- LIVE STAKES
  - STAKES SHALL BE HARVESTED AND INSTALLED DURING DORMANCY.
  - STAKES SHALL BE FRESH, HEALTHY, AND FREE OF DISEASE.
  - STAKES SHALL BE AT LEAST 1 cm DIAMETER AND 60 TO 100 cm LONG TO ENSURE ADEQUATE ROOTING POTENTIAL.
  - INSTALL LIVE STAKES POINTED-END DOWN, ENSURING THE BUDS FACE UPWARD.
  - DRIVE THE STAKE AT LEAST 2/3 OF ITS LENGTH INTO THE SOIL. USE A METAL ROD OR REBAR TO ESTABLISH A PILOT HOLE IN COMPACTED OR DENSE SOILS. ENSURE AT LEAST 2-3 LIVE BUDS REMAIN ABOVE THE SOIL SURFACE.
  - PLACE STAKES IN CLUSTERS OF 3-5 PLANTS, SPACED 0.5-1.0 m APART.
  - AFTER INSERTION, GENTLY FIRM THE SOIL AROUND THE STAKE TO REMOVE AIR POCKETS AND IMPROVE SOIL CONTACT.

CLIENT:

REGIONAL DISTRICT OF NANAIMO  
6300 HAMMOND BAY ROAD  
NANAIMO, BC  
V9T 6N2



| REV. | DATE        | DESCRIPTION       |
|------|-------------|-------------------|
| 0    | 18 MAR 2025 | ISSUED FOR REVIEW |
| 1    | 9 MAY 2025  | ISSUED FOR TENDER |
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SEAL:

COATS MARSH WEIR DECOMMISSIONING

SITE RESTORATION

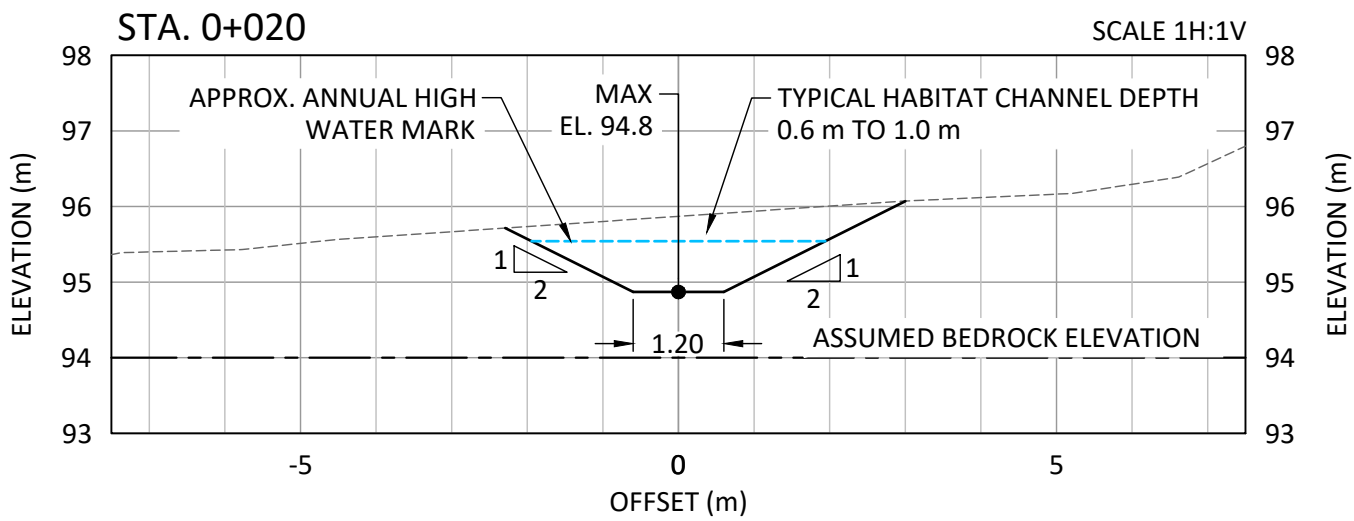
|                        |   |                         |
|------------------------|---|-------------------------|
| DESIGNED: E. ARBUCKLE  | SHEET ID: 3008511-04-IFT-CM_WEIR_DECOMM-R1-005 R1 | SHEET No:<br><b>005</b> |
| DRAFTED: R. CLARK      | STATUS: ISSUED FOR TENDER                         |                         |
| CHECKED: N. VALSANGKAR | SCALE: AS SHOWN WHEN PLOTTED D SIZE               |                         |
| APPROVED: G. HILL      | DATE: 9 MAY 2025                                  | REV No: R1              |




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PLAN VIEW - PROPOSED HABITAT CHANNEL EXCAVATION  
SCALE = 1:250



TYPICAL SECTION A - HABITAT CHANNEL  
SCALE = 1:100

|  |   |        |                  |                               |
|--|---|--------|------------------|-------------------------------|
| CLIENT:<br><br>REGIONAL DISTRICT OF NANAIMO<br>6300 HAMMOND BAY ROAD<br>NANAIMO, BC<br>V9T 6N2 |  | REV. 0 | DATE 18 MAR 2025 | DESCRIPTION ISSUED FOR REVIEW |
|  |   | REV. 1 | DATE 9 MAY 2025  | DESCRIPTION ISSUED FOR TENDER |
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SEAL:

COATS MARSH WEIR DECOMMISSIONING

HABITAT CHANNELS (PROVISIONAL)

|                        |   |                         |
|------------------------|---|-------------------------|
| DESIGNED: E. ARBUCKLE  | SHEET ID: 3008511-04-IFT-CM_WEIR_DECOMM-R1-006 R1 | SHEET No:<br><b>006</b> |
| DRAFTED: R. CLARK      | STATUS: ISSUED FOR TENDER                         |                         |
| CHECKED: N. VALSANGKAR | SCALE: AS SHOWN WHEN PLOTTED D SIZE               |                         |
| APPROVED: G. HILL      | DATE: 9 MAY 2025                                  |                         |

REV No: R1