

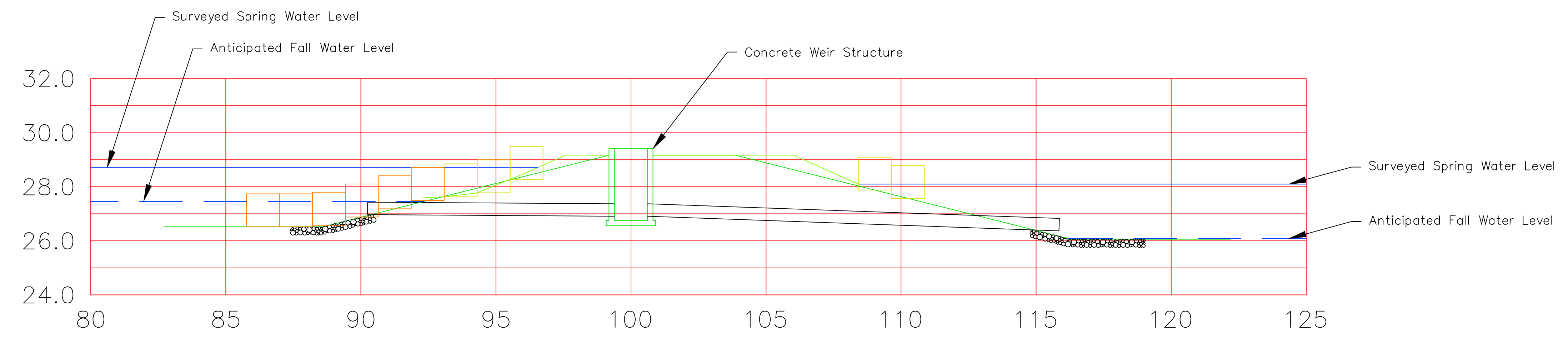
**Town of Swan River**  
**Lagoon Weir Culvert Replacement**

The existing culverts from the primary cell to the weir and from the weir to the secondary cell will be replaced by the following procedures.

1. A small coffer dam will be constructed in the primary cell immediately south of the weir. The dam will be approximately 7.5 m wide, parallel to the intermediate embankment separating the primary and secondary cells, and extend approximately 3.5 m out from the crest of the embankment (see attached figure). The coffer dam will be constructed of 1 row of 4'x4'x4' mini bulk bags.
2. The toe of the intermediate embankment north of the weir in the secondary cell will be reinforced with a double row of mini bulk bags approximately 7.5 m wide (see attached figure).
3. When the secondary cell is ready to discharge, the water will be pumped out of the mini bulk bag coffer dam in the primary cell to lower the static head on the upstream side of the intermediate embankment while the secondary cell is discharged. Continuous monitoring and occasional pumping of the coffer dam will be required during the secondary cell discharge.
4. Once the secondary cell is discharged, the culvert from the weir to the secondary cell will be plugged with a pig.
5. Water from the primary cell will be pumped into the secondary cell by three 6" diameter pumps to equalize the cells.
6. Steps 3 and 5 will be repeated until the final discharge ending October 31st.
7. After the final discharge a clay berm will be pushed out into the secondary cell perpendicular to the intermediate embankment and overtop of the existing culvert.
8. A larger berm will be pushed out into the primary cell into the mini bulk bag coffer dam. The mini bulk bags at the end of the berm will be removed and the berm will be pushed out in the wet until it is approximately 3 m past the end of the existing culvert. Mini bulk bags will be placed around the edge of the berm as it is being pushed out.
9. The secondary cell culvert will be replaced by excavating into the secondary cell berm, removing the existing pipe and replacing it with new pipe. The new pipe will be placed at the same elevation as the existing pipe so that the impervious layer below the cell is not penetrated.
10. The secondary cell berm will be shaped at 4 to 1 slopes around the culvert and armoured with 0.6 m diameter riprap. If the existing 9'x9' riprap bed at the outlet cannot be found a new 9'x9' riprap bed will be placed at the outlet of the secondary cell pipe.
11. The primary cell culvert will be replaced by excavating into the primary cell berm, removing the existing pipe and replacing it with new pipe. The new pipe will be placed at the same elevation as the existing pipe so that the impervious layer below the cell is not penetrated.
12. A new valve will be installed inside the concrete weir chamber to replace the weir as per the inspection note from our conservation office.
13. The primary cell pipe will be covered with back fill and then the mini bulk bags will be removed from the edges of the berm and the berm will be shaped at 4 to 1 slopes around the culvert as best as possible in the wet. The remaining slopes of the berm will be armoured with 0.6 m diameter riprap.

NOTES:

1. ALL DIMENSIONS AND ELEVATIONS ARE SHOWN IN METRES. ELEVATIONS ARE IN FLOATING SYSTEM NOT TIED TO GEODETIC VERTICAL DATUM
2. WORK CONSISTS OF CONSTRUCTION OF TWO COFFERDAMS OVER THE EXISTING CULVERTS IN THE PRIMARY AND SECONDARY CELL. ONCE THE COFFERDAMS ARE BUILT THE EXISTING CULVERTS WILL BE EXCAVATED AND REMOVED AND REPLACED WITH 18" SDR SEWER PIPE.
3. INSTALLATIONS ARE TO BE MADE AS PER TOWN OF SWAN RIVER CONSTRUCTION STANDARDS AND PROVINCIAL STEWARDSHIP GUIDELINES. VERIFY MEASUREMENTS WITH TOWN ENGINEERING DEPARTMENT PRIOR TO EXCAVATION. NEVER LEAVE TEMPORARY WOOD BLOCKING OF ANY TYPE IN PLACE BENEATH PIPING.
4. ALL MATERIALS USED MUST COMPLY WITH CSA AND/OR OTHER RECOGNIZED STANDARDS FOR USE IN CANADA.
5. FIELD NOTES AND A DAILY LOG MUST BE KEPT OF WORKER AND EQUIPMENT HOURS, MATERIALS INSTALLED AND LOCATIONS THEREOF AND GRANULAR VOLUMES PLACED.
6. ALL ON-SITE PROCEDURES MUST MEET WITH WHS REGULATIONS AND THE ORIENTATION AND SIGN-IN PROCESS MUST BE PROVIDED FOR ALL WORKERS AND VISITORS TO THE SITE.
7. ANTICIPATED FALL WATER LEVEL BASED ON OBSERVED WATER LEVEL AFTER FINAL DISCHARGE FROM PREVIOUS YEARS



LEGEND:

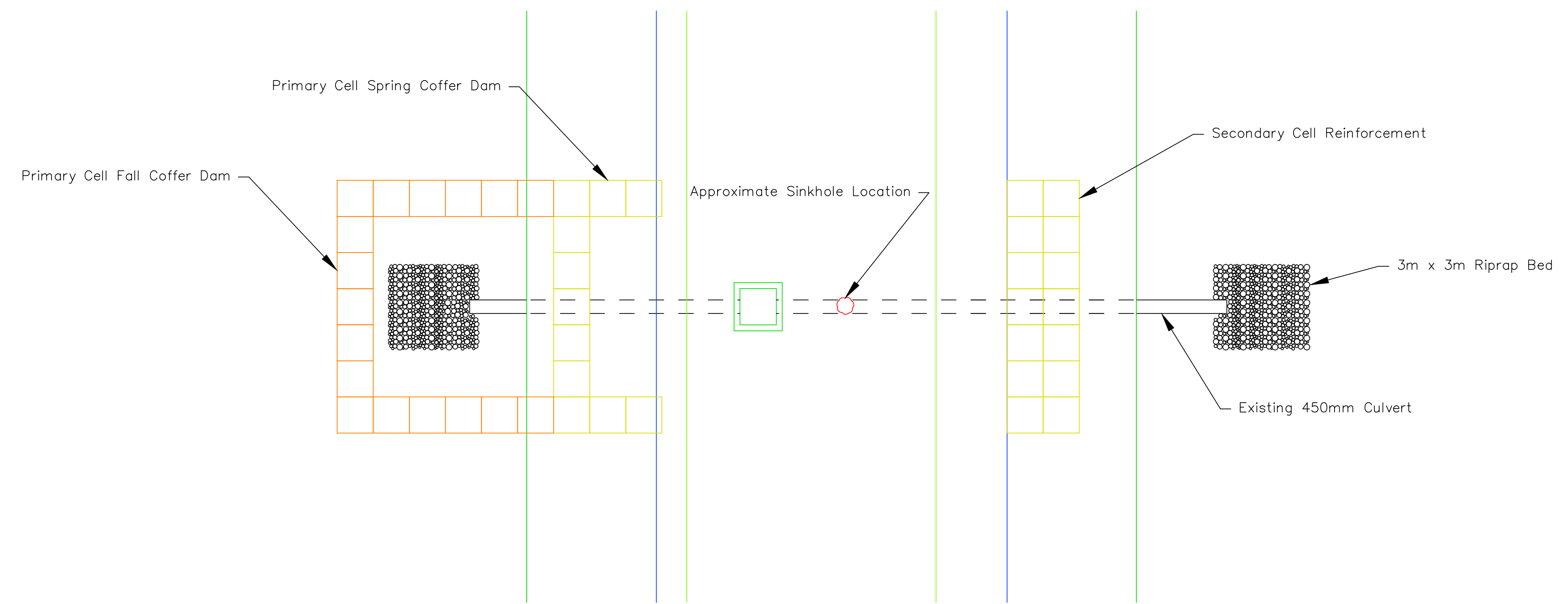
- GRADE (1977 AS-BUILT)
- GRADE (2016 SURVEY)
- MINI BULK BAGS (SPRING)
- MINI BULK BAGS (FALL)

VERIFY SCALES:

THIS BAR IS 5 cm LONG ON THE ORIGINAL DRAWING

REVISION:

#	DATE	BY	DESCRIPTION



TOWN OF SWAN RIVER  
— Engineering Department —

Designed By : Darren Harvey  
 Drawn By : Darren Harvey  
 Checked By : —  
 Date : April 2016  
 Scale : H-1:100 V-1:100

Title:  
Lagoon Weir  
Culvert Replacement  
PROPOSED

Revision : 1 Drawing # : Lagoon Weir\_2016