# EAGLE GOLD PROJECT

## STAGE 1 HEAP LEACH FACILITY PREPARATORY WORKS PLAN

*2017-01*

*OCTOBER 2017*

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## TABLE OF CONTENTS



## List of Tables



## List of Figures



## List of Appendices

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# 1 INTRODUCTION

This Stage 1 Heap Leach Facility Preparatory Works Plan (Plan) describes the preliminary activities in the area of the Heap Leach Facility (HLF) embankment required to support foundation improvement for the HLF and the future construction of the HLF. The Plan provides details about the underdrain system in the area of the HLF embankment, initial development of the underdrain system and also the foundation improvement work considered in the Heap Leach Foundation Improvement Plan (StrataGold 2017).

## 1.1 OVERVIEW

The HLF will be progressively developed in three phases (Figure 1.1-1): one phase during initial construction (pre-mining), and two phases during mining operations. The HLF, including the embankment, will occupy an area of 53 ha and contain about 25 MT at the end of Phase 1; 73ha and contain about 50 MT at the end of Phase 2; and 106 ha and contain up to 77 MT at the end of the life of mine. The Stage 1 HLF preparatory works covers an area of 6.7 ha.

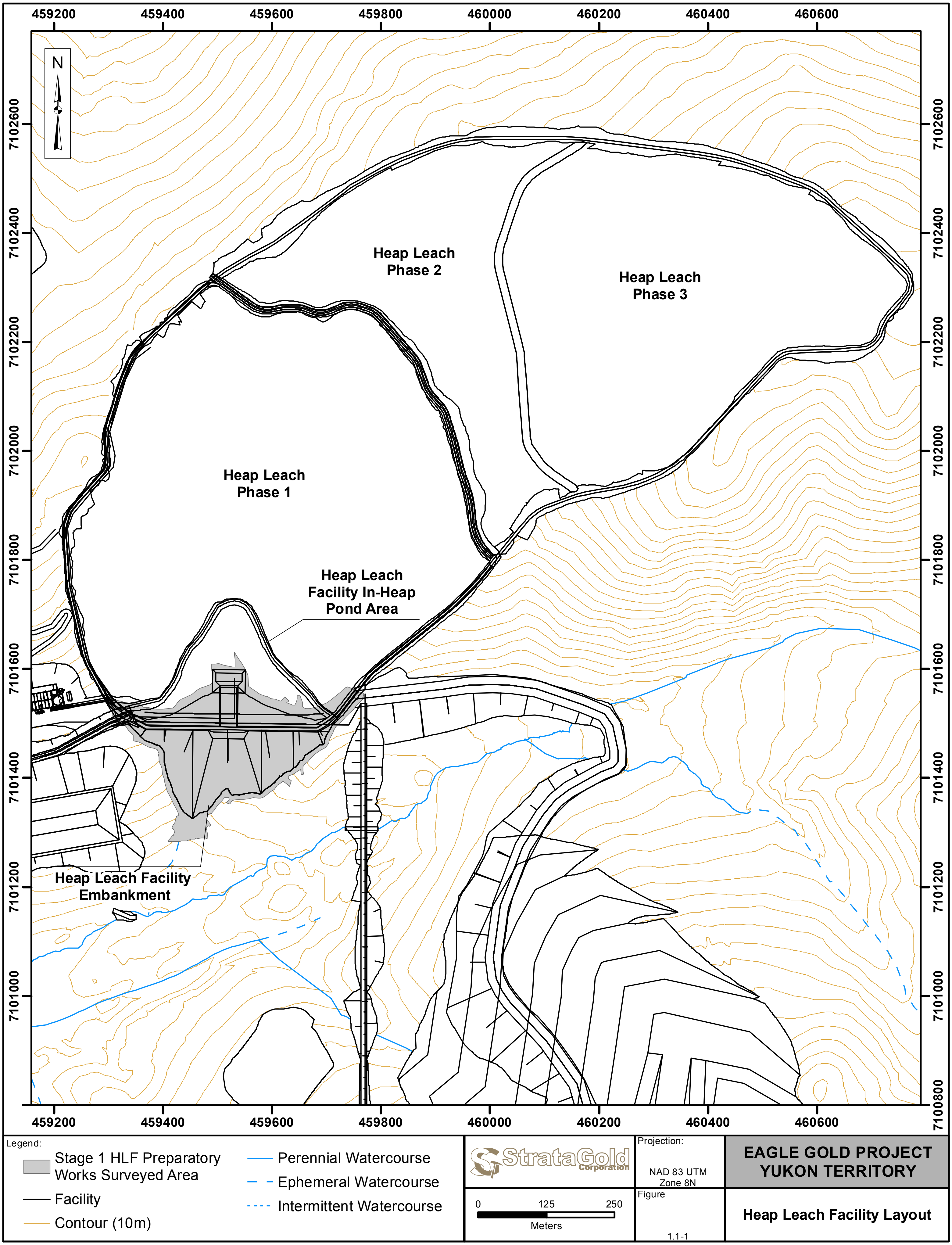
The HLF is a valley fill design which incorporates a confining embankment (dam) designed as an rockfill/earthfill structure with a double-lined upstream dam face, that will provide physical stability to the base of the heap and the stacked ore, and containment of process solution in the In-Heap Pond. The In-Heap Pond leaching configuration provides storage of pregnant solution within the pore spaces of the ore which eliminates the need for downstream process solution ponds. The major design components for the HLF includes the following:

- a rock filled/earthfill embankment (dam) and the In-Heap Pond;
- a composite liner system;
- solution recovery wells;
- associated piping network for solution collection and distribution;
- a leak detection and recovery system (LDRS); and
- a down-stream Events Pond.

Process (barren) solution containing cyanide will be applied to the ore via a drip irrigation system (buried during winter). The resultant PLS will be captured in the solution collection system and flow to the In-Heap Pond. The PLS will be recovered via a sump and using pumps and standpipes. The PLS will be transferred to the ADR plant for gold recovery.

The heap leach pad is designed to contain a network of pipes that will be distributed throughout the limits of the facility at the base of the ore pile. This pipe network will collect and convey PLS and an infiltrated stormwater to the In-Heap Pond where it will be pumped to the process plant via the solution collection wells.

The downstream Events Pond will serve as an overflow containment area that provides additional solution storage in case the In-Heap Pond capacity is exceeded.




EAGLE GOLD PROJECT
YUKON TERRITORY

Heap Leach Facility Layout

# 2 HEAP LEACH FACILITY FOUNDATION CONDITIONS

## 2.1 FOUNDATION CONDITIONS

In general, the HLF site has moderate to high relief, with ground elevation varying from approximately 880 m asl to 1400 m asl.

### 2.1.1 Subsurface Conditions

Geologic conditions at the HLF site reflect the geotectonic forces that produced the Eagle Zone deposit. Folding, faulting and plutonic activities have resulted in relatively weak rock mass in places with relatively poor mechanical properties. Further, frost fracturing and discontinuous permafrost affect rock/soil characteristics in areas lower in elevation.

Overburden soils encountered on the sloping ground in the Ann Gulch valley typically consist of a veneer of organic soils overlying a blanket of colluvium, which overlies weathered bedrock.

Glacial till is generally only encountered on the lower flanks of the north-facing slopes of the Dublin Gulch valley, and do not occur within the HLF footprint. Where present, the till is often overlain by colluvium. Placer tailings (fill from reworked alluvium) cover most of the valley bottom of the Dublin Gulch valley, but are not located within the HLF footprint.

The bedrock encountered under the proposed HLF site is classified as metamorphosed sedimentary rock, with a variably deep weathering profile in the near surface. The intact rock strength of the rock types expected to be encountered within the near surface of the foundation is highly variable, with strength ranging between R0 class (i.e. corresponding to < 1 MPa Unconfined Compressive Strength, UCS) and R4 (50-100 MPa UCS). The average intact strength is estimated to be approximately R2 (5-25 MPa) in the metasedimentary rock, depending upon the degree of weathering, but with significant variability across the site.

#### 2.1.1.1 Overburden

Overburden soil conditions are distinctly different in the Dublin Gulch valley bottom from those encountered above the valley bottom in Ann Gulch in the area of the proposed HLF. In the uplands above the valley bottom, the upper soil unit observed in test pits and boreholes consists of a thin horizon of organic soil, rootlets, woody debris and plant matter ranging from 0.1 to 2.7 m thickness and averaging approximately 0.3 m. The organic cover above the valley bottom overlies colluvium; the colluvium ranges in thickness from 0.2 to 15.2 m, and averaging approximately 2.9 m. The colluvium consists of loose to compact angular gravel with occasional cobbles in a silt and sand matrix, derived from transported weathered metasedimentary bedrock. The colluvium may also include variable amounts of organics, which are often observed in distinct layers within the colluvium.

The placer tailings in the Dublin Gulch valley bottom have highly variable particle size distribution and density, and are generally saturated. The HLF facilities layout does not overlay the placer tailings deposits; however, these materials may be used for construction of required fills. The material is generally a well graded, silty sand and gravel, ranging to sand and gravel with some silt and occasional cobbles and boulders. There is little to no vegetative cover on the placer tailings.

Seismic refraction surveys were performed to evaluate the variability of the overburden depth. Generally, the seismic refraction survey results indicate that the thickness of the overburden transitions smoothly from very little at the top of the slopes increasing to the valley floor. This is the same trend with the depth of weathering.

#### 2.1.1.2 Bedrock

Bedrock was observed in the uplands above Dublin Gulch immediately below colluvium at depths ranging between 0.0 and 16.8 m below existing grade (average depth to bedrock at 3.5 m where observed). The left abutment (looking downstream) of the proposed HLF confining embankment is characterized by colluvium up to 4 m in thickness over weathered bedrock (generally class R0 to R1). R1 class rock referred to as Type 3 rock in the Heap Leach Foundation Improvement Plan, has a minimum intact UCS strength greater than 1 MPa and can be excavated with normal excavating equipment. The data in the right abutment area indicates colluvium thickness greater than 6 meters.

Bedrock at the mine site is subdivided into three broad categories – Type 1, Type 2 and Type 3 – on the basis of rock mass quality and inferred engineering behavior, with Type 1 being the highest quality, and Type 3 being the lowest quality with unconfined compressive strength of 1 to 5 MPa. Type 3 bedrock, the lowest quality rock mass considered to behave as rock (rather than as a soil), can be recognized on the basis of evident preserved fabric of the parent rock within the highly weathered rockmass, and the requirement for moderate effort to excavate with heavy excavators. Types 1 and 2 bedrock are of generally better rockmass quality. The transition from Type 3 to Type 2 can be inferred where it becomes necessary to rip the rock. Type 1 bedrock will require the use of hydraulic hammers and/or drilling and blasting to excavate.

Observed bedrock consisted of highly to completely weathered metasedimentary rock (i.e., Type 3 rock) or moderately to highly weathered rock (i.e., Type 2 rock). The metasediments in general are observed as strongly foliated yellowish brown to dark grey phyllites interbedded with quartzites. The quartzites are variably gritty, micaceous, and massive. Phyllitic metasediments are composed of muscovite-sericite and chlorite.

The rock mass quality and characteristics have been inferred from observations in boreholes within the heap leach pad footprint. Rock Mass Rating values of 20 to 30 were determined from the observed rock core to about 10 m depth, then increased to about 45 to 50 at most locations.

Seismic refraction results indicate highly weathered bedrock ranging from 0 to 2 m in the proposed HLF confining embankment left abutment. The depth to moderately weathered bedrock ranged from 20 to 25 m in this area.

#### 2.1.1.3 Groundwater

The observed groundwater depths on the open slopes in the upper Ann Gulch valley range from 6.1 m below grade close to the middle of Ann Gulch to 15.4 m in the headwaters of Ann Gulch. It is anticipated that these levels will vary seasonally. A standpipe piezometer installed at borehole BH-

BGC16-091 in the area of the planned HLF confining embankment indicated a water level of 10 m and 5 m below top of pipe measured in September 2016 and June 2017, respectively. These levels correspond to 5 m below the adjacent streambed in September 2016 and level with the streambed in June 2017. The piezometer location is approximately 50 m away from the streambed.

#### 2.1.1.4 Permafrost

Frozen ground as discontinuous permafrost was encountered within the footprint of the HLF footprint in about 6 of 30 test pits in the Ann Gulch basin. When observed in a plan view, the test pits with frozen ground are scattered in the Phase 1 HLF pad area and in the area of the proposed Events Pond. Frozen ground was typically encountered within colluvial gravels and gravels and sands with depths varying between 0.6 m to 2.8 m, and occasionally included excess ice with limited thickness. The HLF Foundation Improvement Plan presents requirements for identifying and removing ice-rich materials.

# 3 UNDERDRAIN SYSTEM

An underdrain system will be constructed to collect and drain subsurface water from beneath the HLF and limit upward pressure on the HLF liner. The HLF drains will convey subsurface water to collector pipes that will discharge to an outlet monitoring vault.

The preparatory works considered in the Plan include the installation of the underdrain to the limits of the HLF embankment with sufficient backfilling to original ground to ensure the underdrain system is protected through freshet in 2018 such that construction of the HLF embankment and Phase 1 of the HLF can commence in 2018. Backfill operations in 2017 will not extend to an elevation above the pre-site works topography of Ann Gulch.

Table 3.2-1 presents a summary of the material and earthwork requirements for foundation preparation and underdrains during the 2017 construction season.

**Table 2.1-1: HLF Material and Earthwork Requirements**

| Component | Material and Earthwork Requirements |
|---|---|
| Structures | Remove any existing structures |
| Vegetation and Organic Surface Soils | Strip vegetation and organic soil cover to minimum 3 m beyond the HLF construction limits and place in temporary topsoil stockpiles for final reclamation. Locate stockpiles as shown on drawings or at the direction of the Owner. |
| Foundation Improvement | Remove loose and unsuitable materials to Type 3 or better bedrock at the dam abutments.<br><br>Remove ice-rich materials. |
| Underdrains | Install underdrain system (i.e., piping from future in-heap sump area to future monitoring vault) as shown on the drawings.<br><br>Perform grading as necessary in drainage bottoms to allow equipment access and to accommodate the required underdrain size.<br><br>Install underdrains with geotextile, ADS N-12 (or equal) PE pipe and gravel materials as specified. |
| Site Grading (to be completed in 2018) | Remove loose or unsuitable materials within the embankment and limits as directed by the Engineer. Engineer to inspect exposed rock in embankment foundation to determine suitability.<br><br>Stripped rock subgrade surfaces and rock outcrops in at-grade areas to be cleared of loose rock fragments greater than 150 mm in size and wetted in preparation for site grading fill placement. Foundation preparation to consist of placing and compacting fill material in varying thicknesses to suit field conditions to support the liner system.<br><br>Site Grading Fill material shall include inorganic soils with a maximum 150-mm particle size and a minimum of 70 percent passing the 19 mm sieve size. Place fill in maximum 0.3-m loose lifts and compact each lift to a minimum 95 percent of the |

| Component | Material and Earthwork Requirements |
|---|---|
| | maximum dry density (ASTM D-698) within ±2 percent of the optimum moisture content.<br><br>Compacted Rockfill will have a maximum of 70 percent particles passing the 19 mm sieve (and therefore does not meet the specification of Site Grading Fill), and have a maximum rock particle size of no more than two thirds the loose lift thickness. The rockfill shall generally have 300-mm maximum rock particle size and oversized rocks larger than 300 mm shall be removed to the exterior fill slopes. Rocks larger than 300 mm may be incorporated in thicker fill lifts provided the rocks do not protrude from the lift surfaces after compaction, and the required compaction of the lifts is proven achievable by a test fill. |

## 3.1 DESIGN CRITERIA

The parameters and criteria presented below form the basis of design for the HLF underdrain system.

| Groundwater | Quantity/Criteria |
|---|---|
| General | A drainage system is required beneath the liner system to control groundwater pressures. The system is to collect and monitor groundwater in a controlled manner before diversion downslope of the containment embankment. |

## 3.2 UNDERDRAIN SYSTEM DESIGN COMPONENTS

The majority of the underdrain system is located upgradient of the foundation area. This Plan describes only the preparatory works for the piping in the center of the foundation area. In general the underdrain system will include geofabric wrapped around granular drain rock backfill materials and perforated pipes. Within the footprint of the HLF, 100 mm perforated pipes placed at regular intervals (approximately 75 m spacing) will be incorporated with additional drains to be installed during construction as field conditions dictate. The drains will convey subsurface water to 150 mm collector pipes that will discharge to an outlet monitoring vault. The vault is configured to allow for sampling of seepage flows for water quantity and quality, and will be equipped with a pump system to return flows to the HLF for use as make up water (once operational) or allow flows to outfall if discharge criteria are met. The vault will be constructed in 2018. Details of the proposed underdrain system are shown in Drawings EGHLF-XD-03-03 to EGHLF-XD-03-05 and EGHLF-XD-04-01 in Appendix A.

During Stage 1 HLF preparatory works, it is currently assumed that a single lateral 100 mm pipe placement and the 150 mm collector pipes will be installed to ensure the HLF embankment foundation area is properly prepared for 2018 construction works.

# 4 SITE PREPARATION

## 4.1 CONSTRUCTION STAGING

Preparatory works including clearing, grubbing and excavation to Type 3 bedrock in the area of the HLF embankment is underway (as contemplated in the Heap Leach Facility Foundation Improvement Plan). To ensure the embankment foundation area is suitable for HLF construction in 2018, the portion of the underdrain system in the embankment area will be installed in 2017.

The heap leach pad will then be constructed in three primary phases over the life of mine. The HLF embankment and Phase 1 pad will be constructed in 2018 and 2019 to accommodate a maximum of three years of ore production or approximately 25 Mt of ore. The construction of the Phase 2 pad will start before Year 3 of operations. The Phase 2 heap will consist of approximately 25 Mt of ore and will be stacked above the Phase 1 heap and the Phase 2 pad. The Phase 2 heap stacking will begin in Year 3 and conclude at the end of Year 5 of operation.

The Phase 3 pad will be constructed in Year 5. The Phase 3 heap stacking will start at the end of Year 5 of operation and conclude in Year 8. The Phase 3 heap amount will be approximately 25 Mt.

## 4.2 HLF FOUNDATION PREPARATION

Foundation preparation includes removing or relocating any existing structures, removing vegetation and loose or unsuitable materials including ice rich soils, grading, and installation of the subsurface drainage pipelines to prepare a suitable foundation for construction of the HLF.

Several conditions could affect the performance of the HLF foundation; however, when properly identified the conditions can be mitigated. For preparation of the HLF foundation subgrade, all organic soils will be removed, exposing the underlying colluvium. Removal of loose native colluvium and weathered bedrock will be required to provide a suitable subgrade for the placement of the liner and the ore in areas beyond the HLF embankment. The Heap Leach Facility Foundation Improvement Plan provides a review of the characteristics and the estimated spatial extent of the ground ice under the HLF, highlights the characteristics of the ground ice encountered during site investigations, and includes a definition and discussion of ice-rich soils. The report discusses how ice-rich soil can be identified during construction and reviews ground ice removal measures. Removal of ice-rich materials and replacement (as necessary) with compacted fill shall be performed to the satisfaction of the Engineer. The general approach for excavation and identification and removal of topsoil, unsuitable materials and ice-rich materials is provided below:

- **Identify and Remove Topsoil and Loose or Unsuitable Materials:** The natural ground surface will be cleared, grubbed and stripped of all organic and unsuitable materials generally 3 m outside of the limits of the HLF. Clearing and grubbing will include the removal of vegetation and roots. Stripping includes the removal of topsoil, defined as soil of any gradation or degree of plasticity that contains significant quantities of visually identifiable organics (e.g., vegetable matter, sod, roots, or humus) as determined by the Engineer. The thickness of organics (in most cases equal to the depth of the topsoil) to be removed will vary across the site and will be determined by the Engineer based on the character and thickness of material encountered. Clearing, grubbing and stripping will generally be conducted as a single operation.

- **Excavation to Type 3 Bedrock:** In the area of the HLF embankment, excavation to Type 3 or better bedrock will be completed. Bedrock at the Project site is subdivided into three broad categories – Type 1, Type 2 and Type 3. Type 3 bedrock consists of highly weathered metasedimentary rock that has a confined compressive strength of 1 to 5 MPa. Type 3 bedrock is the lowest quality rock mass that is considered to behave as rock (rather than as a soil) and can be recognized on the basis of evident preserved fabric of the parent rock within the highly-weathered rock mass and requires moderate effort to excavate with heavy excavators. Identification of Type 3 bedrock will be identified by suitable qualified construction personnel under the supervision of the Engineer.
- **Identify and Remove Ice-Rich Soils:** Ice-rich soils in permafrost, when thawed and generating excess pore pressures, can result in soil instabilities and therefore, it is critical to identify and remove any ice-rich soils in the foundation of the HLF prior to liner construction and stacking. On the other hand, if the frozen ground does not contain excess ice (no ice-rich soils) and is thaw stable, there is negligible impact on the stability of the ground upon thaw. A detailed description of the methods for addressing ice-rich soils and for the overall HLF foundation preparation is provided in the HLF Foundation Improvement Plan (SGC 2017).

# 5 QUALITY ASSURANCE / QUALITY CONTROL

The construction of all phases of the HLF will be provided to construction personnel in Project Technical Specifications and will include: site preparation, fill placement, geosynthetic installation and pipework installation. Specific features of the Technical Specifications report include, but are not limited to the following:

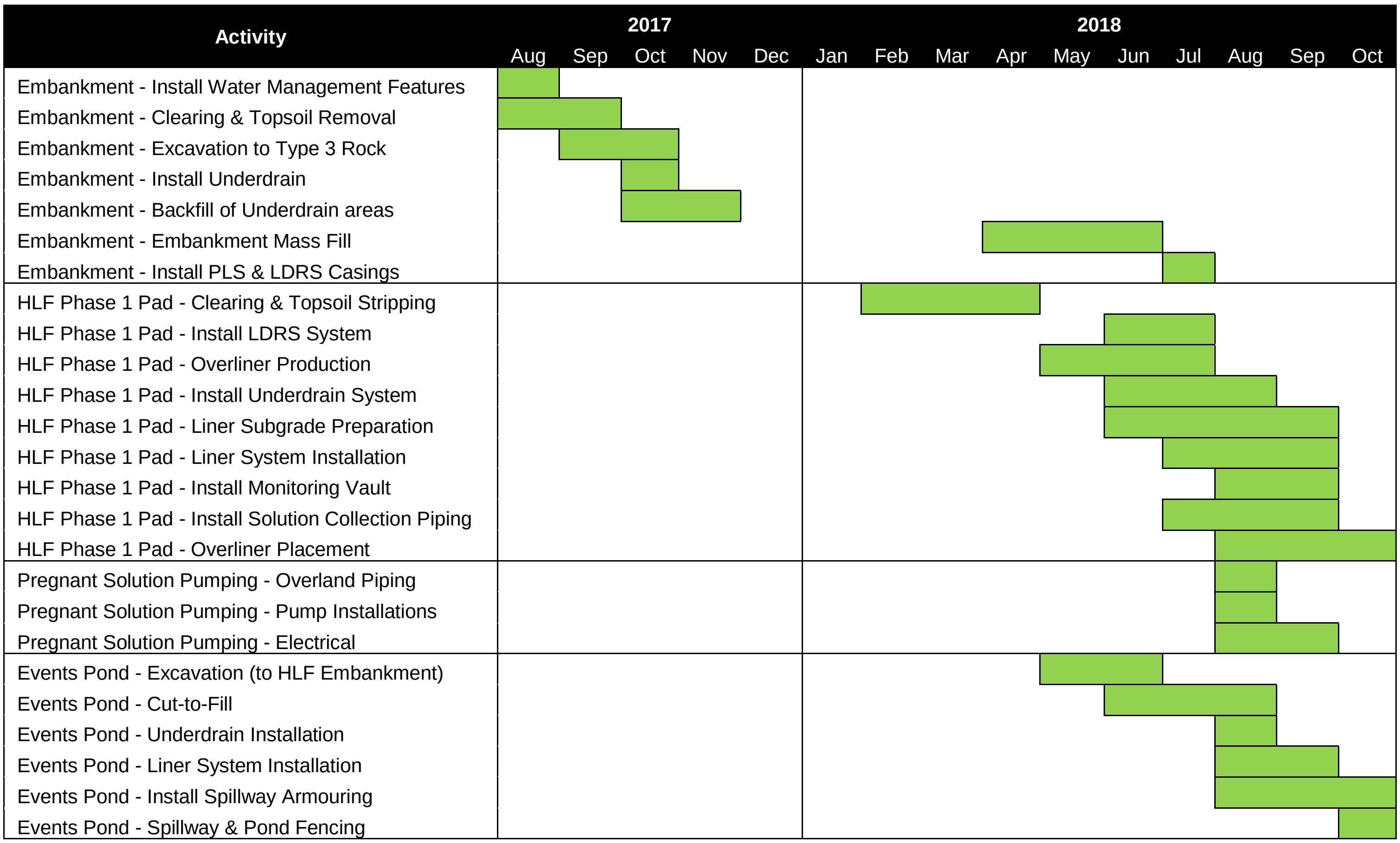
- Mobilization/demobilization of all equipment and material required for the work;
- Installation of temporary interceptor collection ditches and diversions for surface water control;
- Clearing, grubbing and stripping in required areas;
- Excavation in required areas;
- Development of borrow areas within and outside of the HLF limits;
- Construction of access roads for HLF construction;
- Foundation preparation for site grading fill and liner placement;
- Fill placement and compaction;
- Installation of geosynthetic materials for liner, drainage and leak detection systems;
- Installation of solution collection pipework;
- Placement of overliner drain fill; and
- Furnishing and installing materials and constructing items appurtenant and incidental to the above.

# 6 CONSTRUCTION SCHEDULE

## 6.1 OVERVIEW

A HLF construction schedule is provided in Table 6.1-1. This construction schedule is illustrative and dependent upon receipt of continuing regulatory approvals, project financing, contractor availability and seasonal limitations.

**Table 6.1-1: HLF Construction Schedule**




## 6.2 ROUGH EARTHWORKS

Preparation of the ground for construction of Phase 1 of the HLF began with clearing and grubbing of the embankment area to allow for foundation preparation of the confining embankment. Once cleared and grubbed, topsoil was stripped and stockpiled for later use in the reclamation and closure phase of the Project. During these activities, any material identified to be suitable for use in construction is segregated and stockpiled when practicable.

Following topsoil stripping, the area is assessed for any instances of permafrost with the intent to remove any such material and replace it with suitable fill. These activities are for the most part not seasonally dependent save for the handling of areas with permafrost, which will be managed in accordance with the Frozen Materials Management Plan.

Clearing, grubbing and grading the HLF foundation preparation began Q3 2017 with a target completion date of Q2 2018. Additional rough earthworks for Phase 1 of the HLF will continue throughout 2018, with a winter hiatus due to cold weather, to prepare the Events Pond and the up-gradient Phase 1 HLF interceptor ditch.

## 6.3 FOUNDATION PREPARATION

Foundation preparation for the HLF includes removing vegetation and loose or unsuitable materials including ice rich soils, and grading to prepare a suitable foundation for the construction of the HLF. The HLF Foundation Improvement Plan provides a field guide for identifying ice-rich frozen soils, loose or unsuitable materials, and Type 3 bedrock during construction to comply with licence conditions. The document provides the field methods for identifying these material types during construction and provides practical recommendations for removal measures, with the goal to improve the HLF foundation conditions.

1) Identify and remove topsoil and loose or unsuitable materials,
2) For the HLF embankment, excavate to Type 3 bedrock,
3) Identify and remove ice-rich soils, and
4) Final subgrade and foundation preparation.

Foundation preparation for the HLF began in Q3 2017 with an expected completion date of late Q2 2018.

## 6.4 HLF UNDERDRAIN

Upon completion of rough earthworks the installation of the initial underdrain system in the foundation area only will commence. Installation of the underdrain system is anticipated to be complete in Q3 2018. The geosynthetic clay liner system installation will commence in Q3 2018 and will be complete within three months. Placement of the different geosynthetic liner systems will then be completed in late Q3 2018.

Construction activities on the HLF pad liner systems that require the use of heavy equipment will not occur during the coldest months of the year to ensure the liner systems are not damaged. In Q3 2018 solution collection valves, flanges, couplings, etc. will be installed.

Production of the overliner drain fill commences in Q2 2018. In mid to late 2018, ODF placement will begin, as the liner system installations are completed in stages.

## 6.5 CONFINING EMBANKMENT

Construction of the confining embankment will commence in Q2 2018 and will continue for approximately 4.5 months.

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# APPENDIX A

## Issued for Construction Underdrain Drawings

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| UNDERDRAIN PIPE CONTROL POINTS | | | |
|---|---|---|---|
| CP# | EASTING (m) | NORTHING (m) | DESCRIPTION |
| 1 | 459,419.9 | 7,101,265.3 | TRENCH |
| 2 | 459,447.9 | 7,101,292.7 | VAULT |
| 3 | 459,514.9 | 7,101,573.4 | SUMP |
| 4 | 459,580.7 | 7,101,951.2 | TRENCH |
| 5 | 459,749.0 | 7,102,259.1 | TRENCH |


THIS DRAWING MAY HAVE BEEN REDUCED OR ENLARGED. ALL FRACTIONAL SCALE NOTATIONS INDICATED ARE BASED ON ORIGINAL FORMAT DRAWINGS.

NOTES:
1. SEE DRAWING EGHLF-XD-00-02 FOR GENERAL NOTES, ABBREVIATIONS, LEGEND AND FILL TYPES.
2. LATERAL DRAINS SPACED ±75 METRES ALONG UNDERDRAIN MAIN DRAINS. EXTEND FROM MAIN DRAINS TO SEEPAGE AREAS AT ±3% POSITIVE GRADE AS DIRECTED BY FIELD ENGINEER
3. HLF UNDERDRAINS TO BE CONSTRUCTED AS SHOWN WITH ADDITIONAL DRAINS EXTENDED TO SEEPAGE AREAS BASED ON FIELD OBSERVATIONS DURING CONSTRUCTION.

ISSUED FOR CONSTRUCTION

REVISION INFORMATION

| REV. NO. | YY | MM | DD | DRAWN | DESIGN | CHECK | APPROVED | REVISION / ISSUED DESCRIPTIONS |
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| 0 | 17 | 09 | 08 | DAG | TLM | MEH | TLM | ISSUED FOR CONSTRUCTION |
| 1 | 17 | 10 | 12 | DAG | TLM | MEH | TLM | UNDERDRAIN PIPES REVISED |

| REV. NO. | YY | MM | DD | DRAWN | DESIGN | CHECK | APPROVED | REVISION / ISSUED DESCRIPTIONS |
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| | |
|---|---|
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| DESIGN BY: TLM | CHECK DESIGN: MEH |
| LEAD ENGINEER: DEH | APPROVAL DATE: - |
| PROJECT MANAGER: TLM | APPROVAL DATE: - |

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: StrataGold Corporation

PROJECT: EAGLE GOLD - HEAP LEACH FACILITY

TITLE: PHASE 1 UNDERDRAIN PIPING PLAN

| SCALE: | DWG No.: | REV.: |
|---|---|---|
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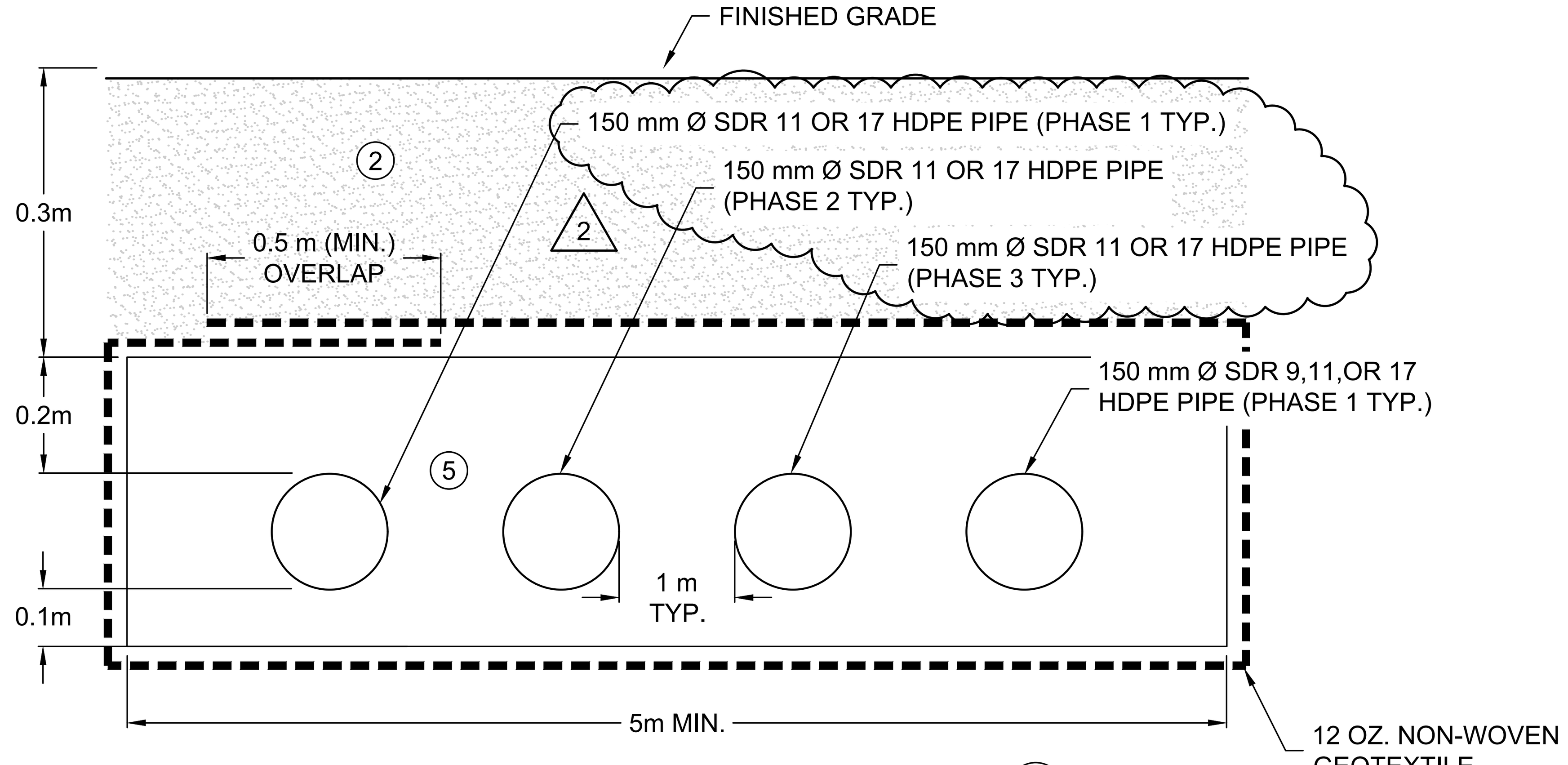


TYPICAL HLF PAD 150 mm UNDERDRAIN HEADERS DETAIL 13/03-03

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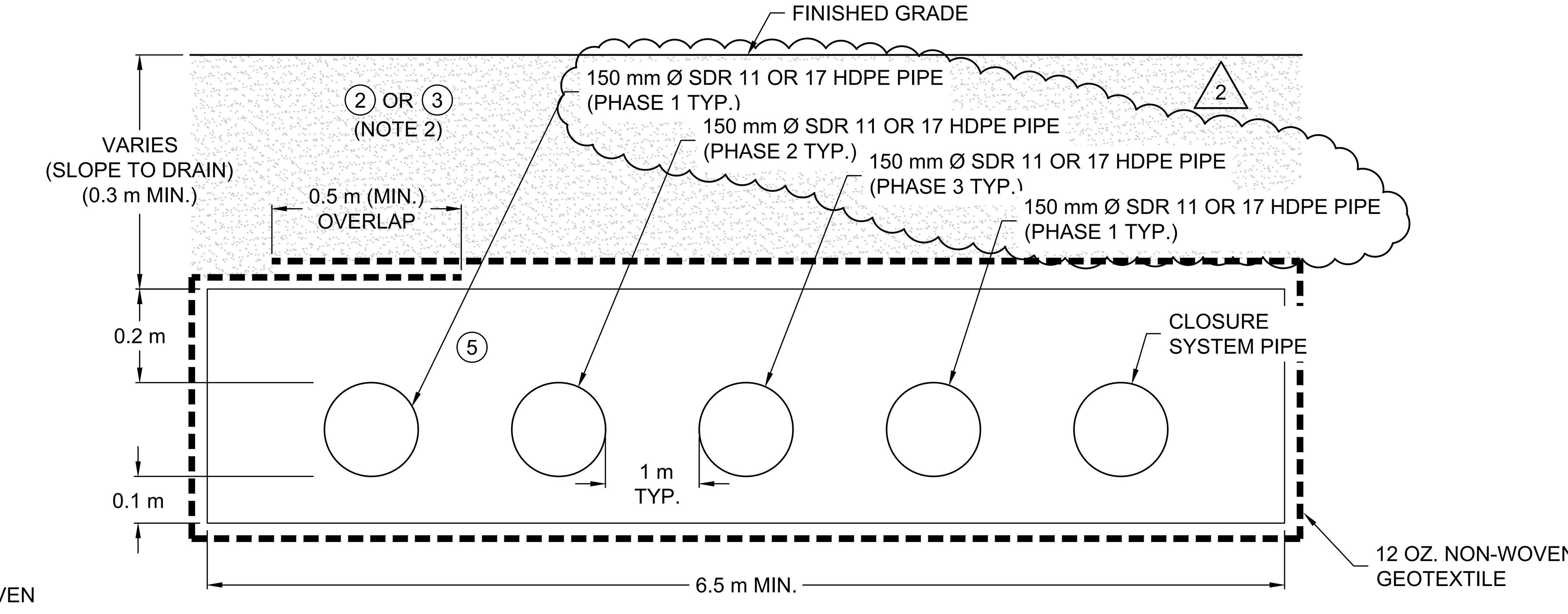


TYPICAL PIPE TRENCH TO MONITORING VAULT DETAIL 14/03-05

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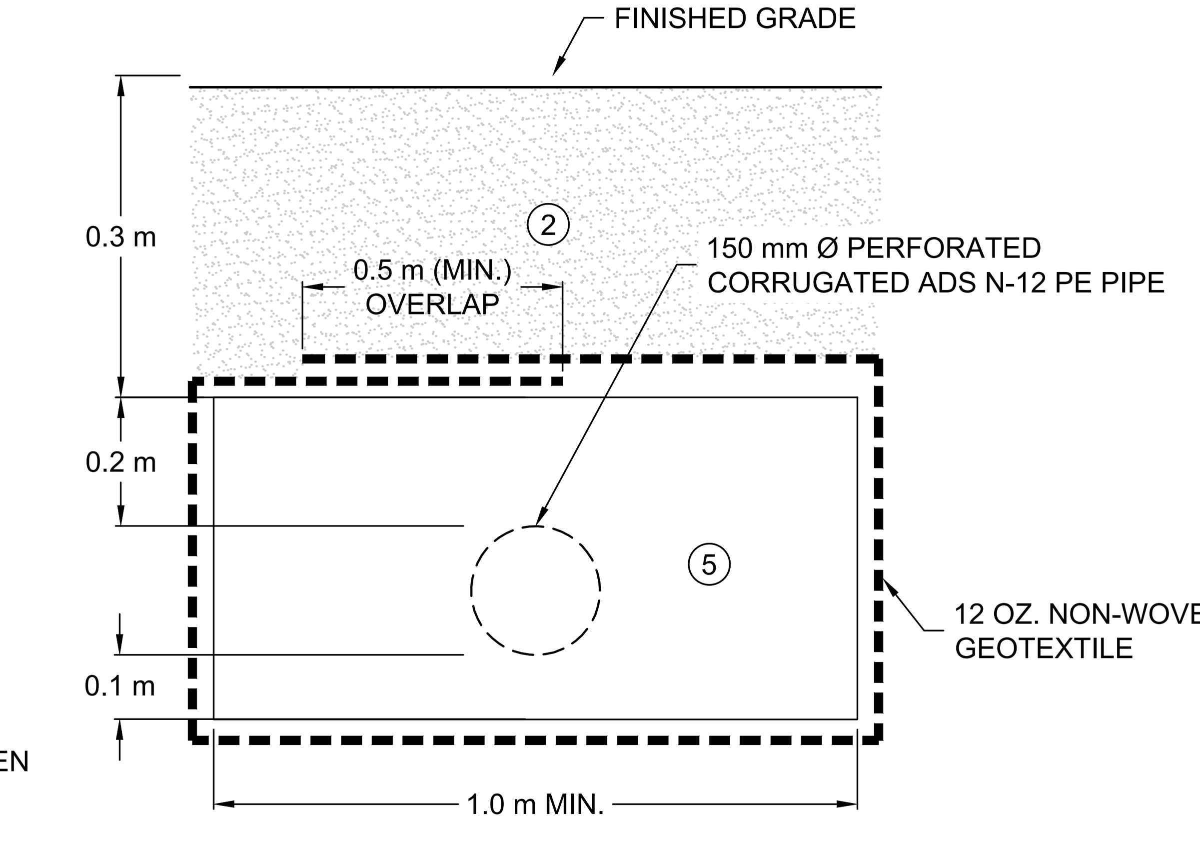
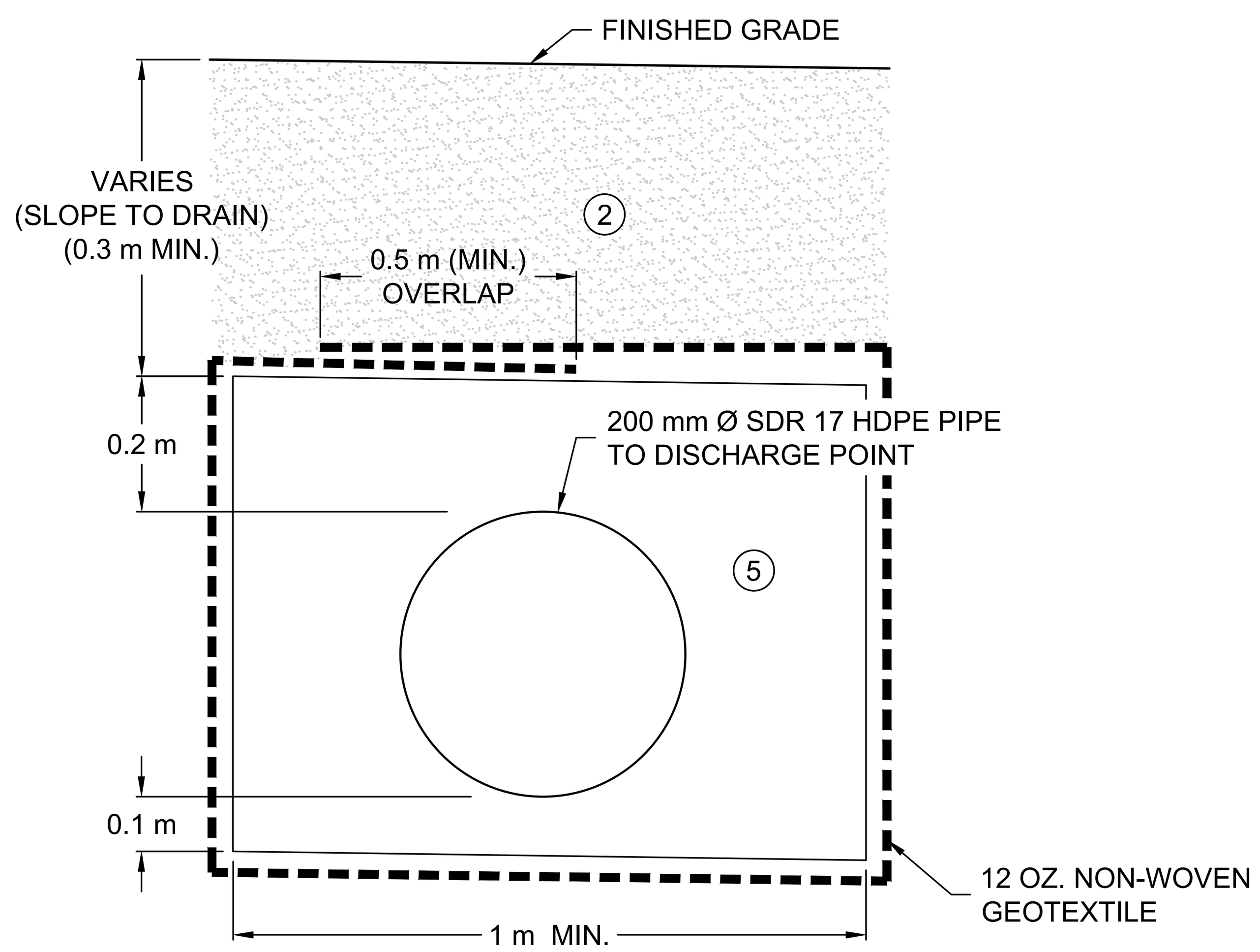


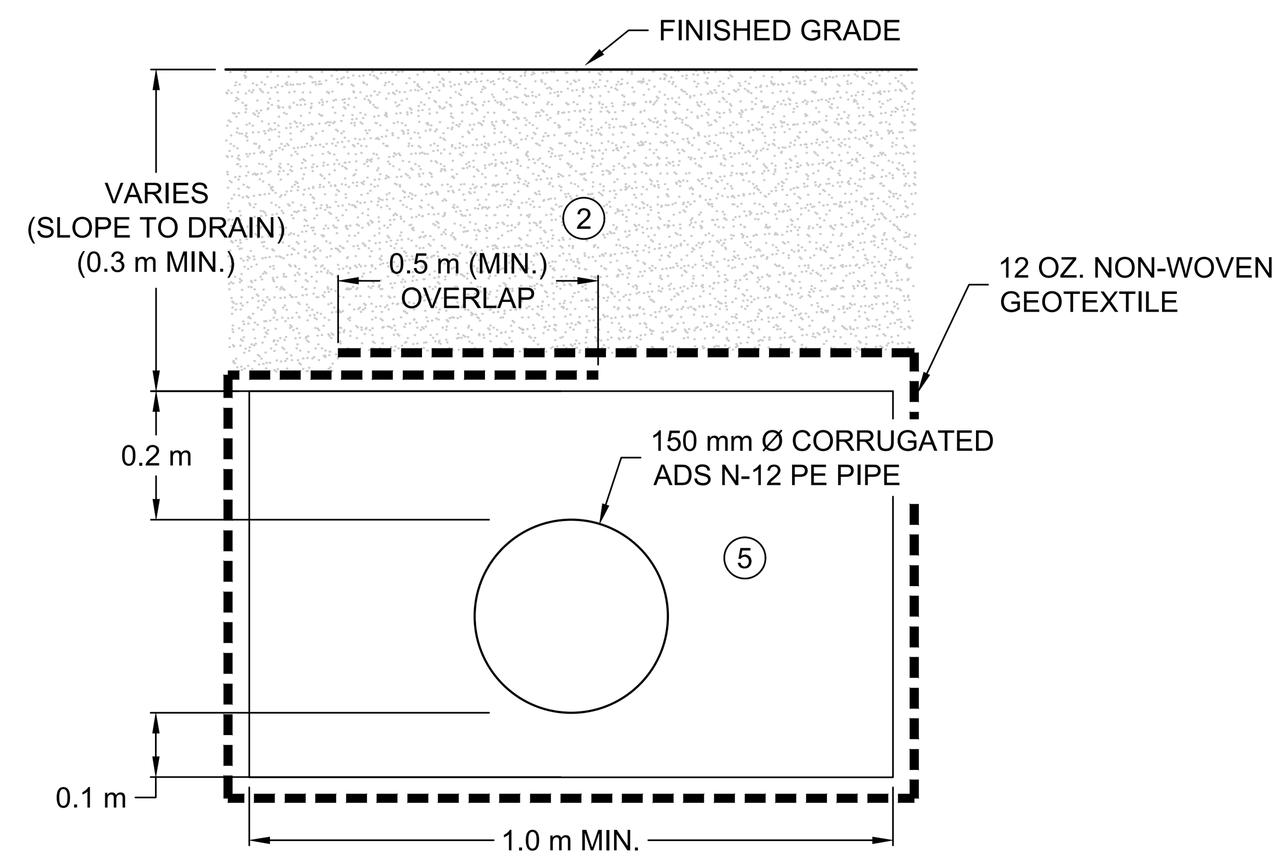

TYPICAL EVENT POND 150 mm UNDERDRAIN DETAIL 15/03-03

SCALE = N.T.S.



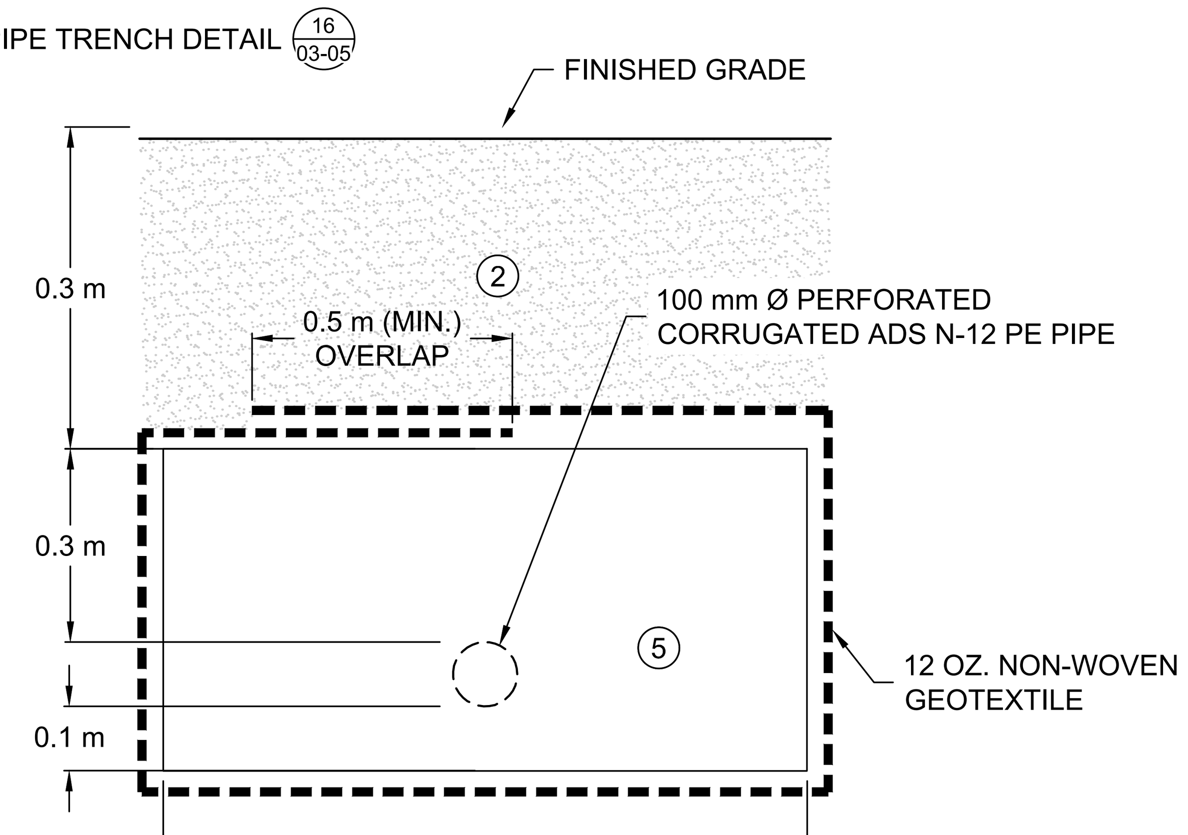

TYPICAL MONITORING VAULT DISCHARGE PIPE TRENCH DETAIL 16/03-05

SCALE = N.T.S.

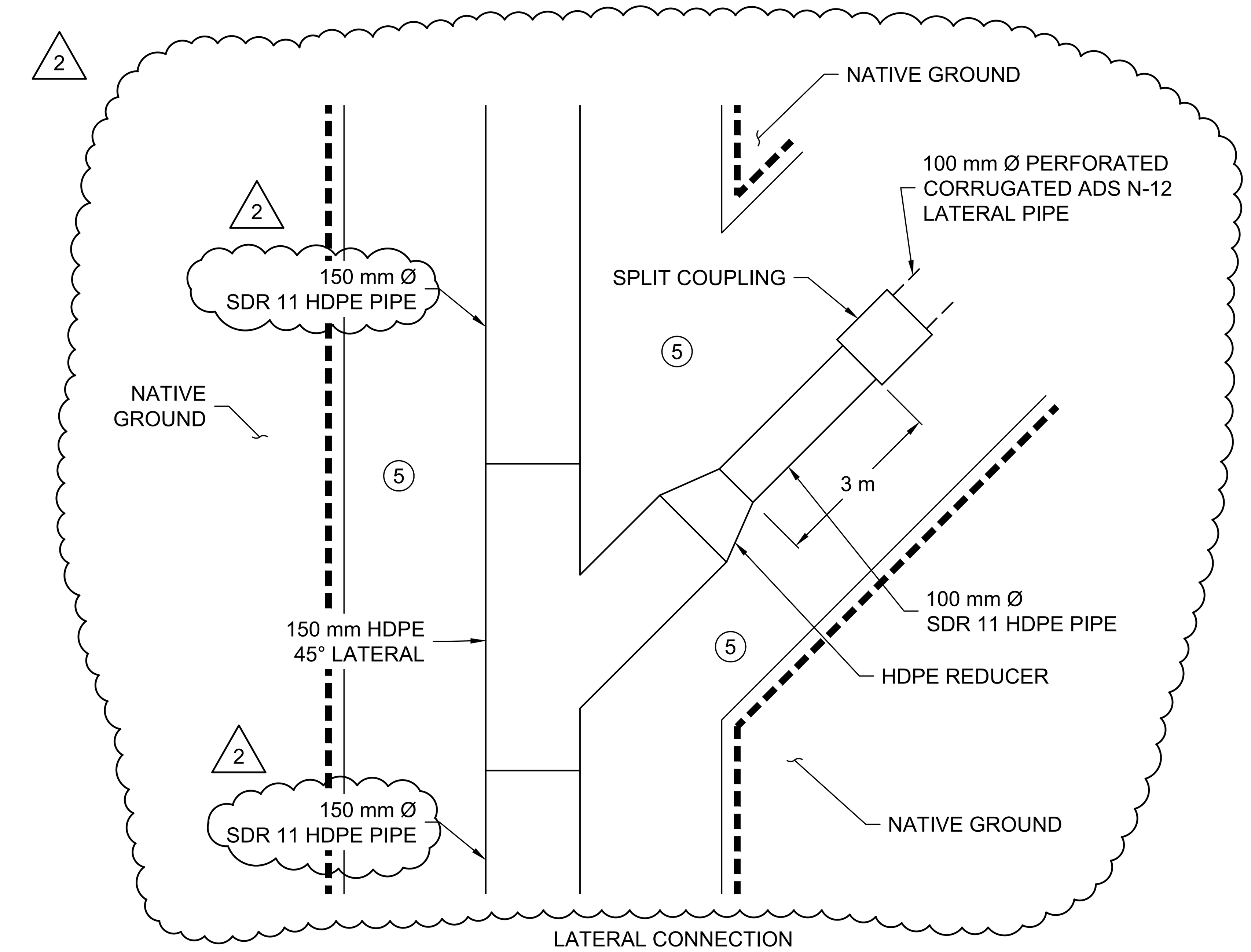



TYPICAL EVENT POND DISCHARGE PIPE TRENCH DETAIL 17/03-03

SCALE = N.T.S.




TYPICAL HLF PAD 100 mm UNDERDRAIN LATERAL DETAIL 18/03-03




TYPICAL UNDERDRAIN PIPE CONNECTION DETAIL 19/03-05

SCALE = N.T.S.

THIS BAR MEASURES 100 mm AT FULL SIZE. ALL SCALES REFERENCED TO FULL SIZE.

NOTES:
1. SEE DRAWING EGHLF-XD-00-02 FOR GENERAL NOTES, ABBREVIATIONS, LEGEND AND FILL TYPES.
2. SELECT FILL SHALL BE USED IN ALL TRENCH LOCATIONS OVERLAIN BY LINER. STRUCTURAL FILL MAY BE USED IN LOCATIONS UNDER THE EMBANKMENT PROVIDED NO ANGULAR PARTICLES OR PARTICLES LARGER THAN 75 mm ARE PLACED IN CONTACT WITH GEOTEXTILE.

THIS DRAWING MAY HAVE BEEN REDUCED OR ENLARGED. ALL FRACTIONAL SCALE NOTATIONS INDICATED ARE BASED ON ORIGINAL FORMAT DRAWINGS.

ISSUED FOR CONSTRUCTION

LEGEND
- 2 SELECT FILL
- 3 STRUCTURAL FILL
- 5 SELECT DRAIN FILL

REVISION INFORMATION

| REV. NO. | YY | MM | DD | DRAWN | DESIGN | CHECK | APPROVED | REVISION / ISSUED DESCRIPTIONS |
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| 0 | 17 | 09 | 08 | DAG | TLM | MEH | TLM | ISSUED FOR CONSTRUCTION |
| 1 | 17 | 09 | 21 | DAG | TLM | MEH | TLM | REVISE DETAILS |
| 2 | 17 | 10 | 12 | DAG | TLM | MEH | TLM | REVISE PIPE SDR |

| REV. NO. | YY | MM | DD | DRAWN | DESIGN | CHECK | APPROVED | REVISION / ISSUED DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|

| | |
|---|---|
| DRAWN BY: DAG | CHECK DRAWING: CJT |
| DESIGN BY: TLM | CHECK DESIGN: MEH |
| LEAD ENGINEER: DEH | APPROVAL DATE: - |
| PROJECT MANAGER: TLM | APPROVAL DATE: - |

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: StrataGold Corporation

PROJECT: EAGLE GOLD - HEAP LEACH FACILITY

TITLE: PHASE 1 UNDERDRAIN PIPING DETAILS

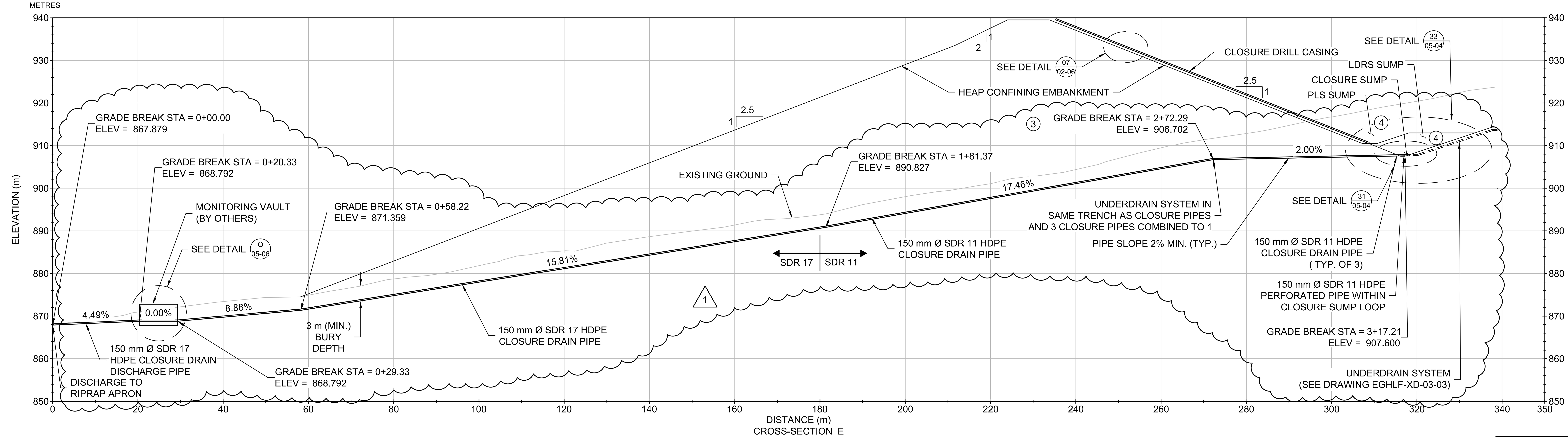
| SCALE: | DWG No.: | REV.: |
|---|---|---|
| 1:1,000 | EGHLF-XD-03-04 | 2 |

X:\Projects\0792 Victoria Gold\CAD\Production\IFC\EAGLE GOLD - HEAP LEACH FACILITY\EGHLF-XD-03-04.dwg Layout: EGHLF-XD-03-04 Plot Date Oct 12 17 Time: 3:55 PM


THIS BAR MEASURES 100 mm AT FULL SIZE. ALL SCALES REFERENCED TO FULL SIZE.

SCALE 1:500

METRES




THIS DRAWING MAY HAVE BEEN REDUCED OR ENLARGED. ALL FRACTIONAL SCALE NOTATIONS INDICATED ARE BASED ON ORIGINAL FORMAT DRAWINGS.

LEGEND

| | |
|---|---|
| 2 | SELECT FILL |
| 3 | STRUCTURAL FILL |
| 4 | OVERLINER DRAIN FILL |
| 5 | SELECT DRAIN FILL |

ISSUED FOR CONSTRUCTION

NOTES:
1. SEE DRAWING EGHLF-XD-00-02 FOR GENERAL NOTES, ABBREVIATIONS, LEGEND AND FILL TYPES.

X:\Projects\0792 Victoria Gold\CAD\Production\IFC\EAGLE GOLD - HEAP LEACH FACILITY\EGHLF-XD-03-05.dwg Layout: EGHLF-XD-03-05 Plot Date Sep 21 17 Time: 5:55 PM

REVISION INFORMATION

| REV. NO. | YY | MM | DD | DRAWN | DESIGN | CHECK | APPROVED | REVISION / ISSUED DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|
| A | 17 | 07 | 31 | DAG | TLM | MEH | TLM | ISSUED FOR REVIEW |
| 0 | 17 | 09 | 08 | DAG | TLM | MEH | TLM | ISSUED FOR CONSTRUCTION |
| 1 | 17 | 09 | 13 | DAG | TLM | MEH | TLM | CLOSURE AND UNDERDRAIN ALIGNMENT AND PROFILE REVISED |

| | |
|---|---|
| DRAWN BY: DAG | CHECK DRAWING: CJT |
| DESIGN BY: TLM | CHECK DESIGN: MEH |
| LEAD ENGINEER: DEH | APPROVAL DATE: - |
| PROJECT MANAGER: TLM | APPROVAL DATE: - |

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: StrataGold Corporation

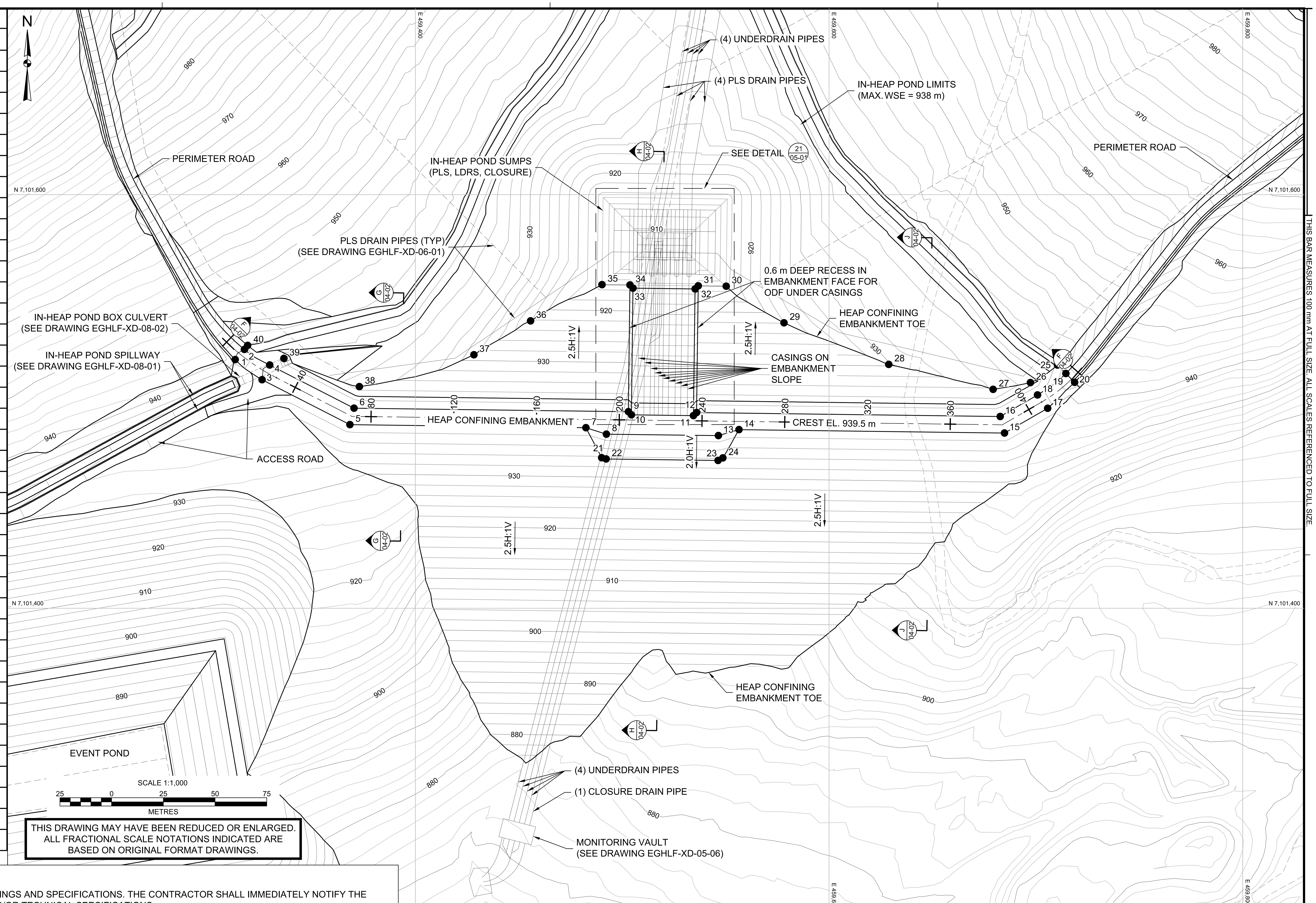
PROJECT: EAGLE GOLD - HEAP LEACH FACILITY

TITLE: CLOSURE PIPING PLAN AND PROFILE

| SCALE: | DWG No.: | REV.: |
|---|---|---|
| 1:500 | EGHLF-XD-03-05 | 1 |

HEAP CONFINING EMBANKMENT FINISHED GROUND CONTROL POINTS

| CP# | EASTING (m) | NORTHING (m) | ELEVATION (m) | DESCRIPTION |
|---|---|---|---|---|
| 1 | 459,312.9 | 7,101,520.2 | 940.7 | CREST |
| 2 | 459,317.4 | 7,101,525.1 | 940.7 | CREST |
| 3 | 459,325.9 | 7,101,510.5 | 939.5 | CREST |
| 4 | 459,329.6 | 7,101,517.6 | 939.5 | CREST |
| 5 | 459,368.4 | 7,101,488.8 | 939.5 | CREST |
| 6 | 459,370.3 | 7,101,496.8 | 939.5 | CREST |
| 7 | 459,482.5 | 7,101,487.3 | 939.5 | CREST |
| 8 | 459,492.4 | 7,101,484.2 | 939.5 | CREST |
| 9 | 459,503.0 | 7,101,495.0 | 939.5 | CREST |
| 10 | 459,504.4 | 7,101,493.5 | 939.5 | CREST |
| 11 | 459,534.4 | 7,101,493.1 | 939.5 | CREST |
| 12 | 459,536.0 | 7,101,494.6 | 939.5 | CREST |
| 13 | 459,546.5 | 7,101,483.5 | 939.5 | CREST |
| 14 | 459,556.5 | 7,101,486.4 | 939.5 | CREST |
| 15 | 459,684.8 | 7,101,484.7 | 939.5 | CREST |
| 16 | 459,682.7 | 7,101,492.7 | 939.5 | CREST |
| 17 | 459,705.7 | 7,101,496.7 | 939.5 | CREST |
| 18 | 459,700.7 | 7,101,503.2 | 939.5 | CREST |
| 19 | 459,714.5 | 7,101,513.5 | 943.2 | CREST |
| 20 | 459,718.7 | 7,101,509.2 | 943.3 | CREST |
| 21 | 459,490.1 | 7,101,472.8 | 933.7 | TOE |
| 22 | 459,492.2 | 7,101,472.2 | 933.5 | TOE |
| 23 | 459,546.3 | 7,101,471.5 | 933.5 | TOE |
| 24 | 459,548.6 | 7,101,472.7 | 934.0 | TOE |
| 25 | 459,710.4 | 7,101,517.6 | 940.6 | TOE |
| 26 | 459,697.3 | 7,101,509.1 | 936.7 | TOE |
| 27 | 459,679.3 | 7,101,505.9 | 934.3 | TOE |
| 28 | 459,628.8 | 7,101,517.9 | 929.7 | TOE |
| 29 | 459,578.2 | 7,101,538.0 | 921.9 | TOE |
| 30 | 459,550.3 | 7,101,555.7 | 915.0 | TOE |
| 31 | 459,536.8 | 7,101,555.9 | 915.0 | TOE |
| 32 | 459,535.2 | 7,101,554.4 | 915.0 | TOE |
| 33 | 459,505.2 | 7,101,554.8 | 915.0 | TOE |
| 34 | 459,503.8 | 7,101,556.3 | 915.0 | TOE |
| 35 | 459,490.3 | 7,101,556.5 | 915.0 | TOE |
| 36 | 459,455.7 | 7,101,539.0 | 922.2 | TOE |
| 37 | 459,428.3 | 7,101,522.5 | 928.9 | TOE |
| 38 | 459,372.9 | 7,101,507.2 | 935.3 | TOE |




NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER SHOULD UNCERTAINTIES ARISE WITH THE DRAWINGS, SCOPE, AND/OR TECHNICAL SPECIFICATIONS.
3. ACTUAL DEEP DYNAMIC COMPACTION (DDC) GROUND TREATMENT AREA TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
4. SEE PROJECT TECHNICAL SPECIFICATIONS FOR PAD GRADING AND DDC REQUIREMENTS.
5. MINE PLANT, CRUSHER, CONVEYORS, AGGLOMERATOR, CAMP, MONITORING VAULT, SEDIMENT PONDS, ACCESS ROADS AND OTHER INFRASTRUCTURE BY OTHERS.
6. BASE TOPOGRAPHIC DATA BASED ON CONTOURS FROM LIDAR SURVEY PROVIDED BY M3 ENGINEERING, DATED 2011. CONTOUR INTERVAL IS 2 m.
7. COORDINATE SYSTEM IS IN NAD83 (CSRS) UTM ZONE 8N.
8. UNLESS BGC AGREES OTHERWISE IN WRITING, THIS DRAWING SHALL NOT BE MODIFIED OR USED FOR ANY PURPOSE OTHER THAN THE PURPOSE FOR WHICH BGC GENERATED IT. BGC SHALL HAVE NO LIABILITY FOR ANY DAMAGES OR LOSS ARISING IN ANY WAY FROM ANY USE OR MODIFICATION OF THIS DOCUMENT NOT AUTHORIZED BY BGC. ANY USE OF OR RELIANCE UPON THIS DOCUMENT OR ITS CONTENT BY THIRD PARTIES SHALL BE AT SUCH THIRD PARTIES' SOLE RISK.

DRAFT

NOT FOR CONSTRUCTION

HEAP CONFINING EMBANKMENT FINISHED GROUND CONTROL POINTS

| CP# | EASTING (m) | NORTHING (m) | ELEVATION (m) | DESCRIPTION |
|---|---|---|---|---|
| 39 | 459,336.5 | 7,101,520.8 | 938.3 | TOE |
| 40 | 459,318.9 | 7,101,527.1 | 939.7 | TOE |

X:\Projects\0792 Victoria Gold\CAD\Production\IFC\EAGLE GOLD - HEAP LEACH FACILITY\EGHLF-XD-04-01.dwg Layout: EGHLF-XD-04-01 Plot Date Jul 29 17 Time: 7:48 PM

REVISION INFORMATION

| REV. NO. | YY | MM | DD | DRAWN | DESIGN | CHECK | APPROVED | REVISION / ISSUED DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|
| A | 17 | 07 | - | DAG | TLM | MEH | RM | ISSUED FOR REVIEW |

| REV. NO. | YY | MM | DD | DRAWN | DESIGN | CHECK | APPROVED | REVISION / ISSUED DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|

| | |
|---|---|
| DRAWN BY: DAG | CHECK DRAWING: CJT |
| DESIGN BY: TLM | CHECK DESIGN: MEH |
| LEAD ENGINEER: DEH | APPROVAL DATE: - |
| PROJECT MANAGER: TLM | APPROVAL DATE: - |

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT:
StrataGold Corporation

PROJECT: EAGLE GOLD - HEAP LEACH FACILITY

TITLE: EMBANKMENT PLAN VIEW

| SCALE: | DWG No.: | REV.: |
|---|---|---|
| 1:1,000 | EGHLF-XD-04-01 | A |