DRAFT REPORT

APPENDIX E

MINE RECLAMATION AND CLOSURE PLAN

COPPER FLAT MINE

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This report documents the Reclamation and Closure Plan for all of the mine facilities and disturbed areas associated with New Mexico Copper Corporation's Copper Flat project located near Hillsboro, New Mexico in Sierra County. The designs included herein were developed at a level consistent with preliminary designs for agency review. Development of this report and associated preliminary reclamation and closure designs was conducted under the oversight of the following Golder staff:

10-14-16

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10/14/16

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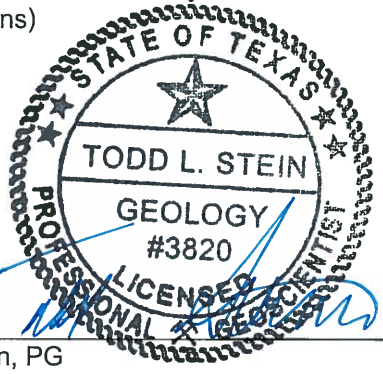

10/14/16

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(Preparation of Copper Flat Mine Reclamation and Closure Plan Document)

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1.0 INTRODUCTION

Golder Associates has been contracted by New Mexico Copper Corporation (NMCC) to prepare a Mine Reclamation and Closure Plan for its Copper Flat project located near Hillsboro, New Mexico in Sierra County (**Figure E1**). This reclamation and closure plan describes the approach for reclamation of all of the disturbed areas described in NMCC's Mine Operations and Reclamation Plan document to which this document is attached as Appendix E. The reclamation and closure plan and associated design criteria conform to; (1) the closure requirements in the Copper Mine Rules (*Subsection A of 20.6.7.18 NMAC, 20.6.7.33 NMAC, 20.6.7.34 NMAC and 20.6.7.35 NMAC*); (2) reclamation requirements described 19.10.6.602.D(15) NMAC and 19.10.6.603 NMAC; and (3) applicable mine reclamation regulations set forth by the Bureau of Land Management (BLM) (3809.401(b)(3) and 3809.420(b)(3)). The goal for reclamation of the site is to re-establish the post-mining land uses consistent with the pre-mining land uses of the site and the surrounding area, i.e., wildlife habitat, grazing, mining, watershed and recreation as identified by the BLM in its approved Land Use Management Plan (BLM, 1986).

The Reclamation and Closure Plan and associated design criteria for the individual Copper Flat facilities are described in Section 2. Section 3 details how the plan will be implemented with regards to regrading operations, growth media placement and the revegetation plan. Section 4 describes the projected reclamation schedule and sequence of reclamation activities. Section 5 details the performance and reclamation standards and requirements. Section 6 provides the references associated with the citations included within the report.

2.0 RECLAMATION AND CLOSURE PLAN DESIGN CRITERIA

This Reclamation and Closure Plan was developed with consideration of the site-specific conditions that will exist at the Copper Flat Mine as a result of previous mine operations at the site by Quintana Minerals, and at the cessation of NMCC's proposed mining operations (end of mine life). The general setting of the Copper Flat Mine area is shown on **Figure E2** (existing features) and **Figure E3** (end of mine life features). The designs are depicted in the drawing set provided in **Attachment E1** of this Plan and have been developed to provide sufficient detail to calculate the financial assurance cost estimate when the Plans are deemed approvable.

The Reclamation and Closure Plan is subdivided into five major facility areas and several ancillary facilities, including:

Major Facility Areas:

- Existing Waste Rock Stockpiles (EWRSPs)
- Proposed Waste Rock Stockpiles (WRSPs)
- Tailings Storage Facility (TSF)
- Open Pit
- Plant Area

Ancillary Facilities:

- Surface Impoundments and Reservoirs
- Growth Media (i.e., Topdressing) Stockpiles
- Other Ancillary Facilities

Each of the major facility areas are discussed in Sections 2.1 through 2.5, and the ancillary facilities are discussed in Sections 2.6 through 2.8. The plans and methods developed herein represent detailed designs for reclamation of the facilities sufficient for agency review and approval. Construction design documents and construction quality assurance/construction quality control (CQA/CQC) plans will be prepared by NMCC for submittal to and approval by the State of New Mexico within 180 days of submission of a notice of intent to implement the closure plan per the Copper Rule (20.6.7.34.B, NMAC). The CQA/CQC plan will provide a detailed description of the work proposed to be performed and the final reclamation designs for the facilities to be closed. Post-closure monitoring activities will be conducted in accordance with Section 20.6.7.35 NMAC, and post-closure monitoring and maintenance any requirements that may be contained in the Copper Flat Mine Permit.

This Reclamation and Closure Plan describes: (1) contemporaneous reclamation that will be conducted, to the extent practicable, during mine operations; (2) facilities to be closed following cessation of mining operations; and (3) components that will be retained following closure of the site. A summary of the key design criteria for reclamation of the facilities to be closed is presented in **Table E1**.

Table E1. Proposed Copper Flat Reclamation Design Criteria

Facilities to be Reclaimed	Outslope Angle (Interbench)[1,2]	Cover Thickness[3,4]	Bench Width[2,5]	Interbench Slope Length[2,6]	Top Surface Slope[7,8]	Bench Cross Slope[5]	Bench Longitudinal Slope[5]	Surface Water Conveyances[2,9]	Comments
Existing Waste Rock Stockpiles (EWRSPs)									
EWRSP-1	3.0H:1.0V max.	36" min.	NA	200' max.	Between 1.0% and 5.0%	NA	NA	Armored channels designed to convey peak flows from 100-year, 24-hour storm event	Requires a pullback from Grayback Diversion to maintain 25-foot setback from diversion. Top surfaces and outslopes to be graded to drain back to Grayback Diversion. Two small detention basins to be constructed to capture and evaporate minimal surface water runoff and provide riparian habitat. Will also regrade and cover safety/containment berm located south of EWRSP-1. There are no slopes greater than 200 feet in length so no benches are required.
EWRSP-2A	NA	0" to 6"		NA	NA			NA	Stockpile will get partially consumed by proposed WRSP-1. Portion that does not get consumed and located outside the OPSDA will get moved to EWRSP-2B or reclaimed as part of WRSP-1 reclamation. Disturbed surfaces will be graded, ripped and covered with 6-inches of suitable cover material where unsuitable growth media exists.
EWRSP-2B	3.0H:1.0V max.	36" min.		200' max.	Between 1.0% and 5.0%			Armored channels designed to convey peak flows from 100-year, 24-hour storm event	Waste material to the north of EWRSP-2B also gets graded and covered. Disturbed areas get graded, ripped, and seeded. There are no slopes greater than 200 feet in length so no benches are required.
EWRSP-3	3.0H:1.0V max.	36" min.		200' max.	Between 1.0% and 5.0%			Armored channels designed to convey peak flows from 100-year, 24-hour storm event	Will be reclaimed as part of the Plant Area reclamation program. There are no slopes greater than 200 feet in length so no benches are required.
EWRSP-4	3.0H:1.0V max.	36" min.		200' max.	Between 1.0% and 5.0%			Armored channels designed to convey peak flows from 100-year, 24-hour storm event	The area between the two lobes of EWRSP-4 will be filled in with clean mine waste during the pre-production years. For reclamation design purposes it is assumed that the area is filled in prior to reclamation. Top surface to be graded to drain back toward the open pit, and the top surface will be used as an equipment and laydown area during operations. There are no slopes greater than 200 feet in length so no benches are required.

Table E1. Proposed Copper Flat Reclamation Design Criteria (continued)

Facilities to be Reclaimed	Outslope Angle (Interbench)[1,2]	Cover Thickness[3,4]	Bench Width[2,5]	Interbench Slope Length[2,6]	Top Surface Slope[7,8]	Bench Cross Slope[5]	Bench Longitudinal Slope[5]	Surface Water Conveyances[2,9]	Comments
New Proposed Waste Rock Stockpiles (WRSPs)									
WRSP-1	2.75H:1.0V max.	36" min.	25'	200' max.	Between 1.0% and 5.0%	1%	1%	Armored channels designed convey peak flows from 100-year, 24-hour storm event	This stockpile is located within the OPSDA and the outslopes will be graded to 2.75H:1V. Portion of EWRSP-2A located along northern perimeter of WRSP-1 will get consumed by this stockpile and reclaimed as part of WRSP-1.
WRSP-2	3.0H:1.0V max.			200' max.					WRSP's 2 and 3 will be reclaimed as one single facility. Southeastern toe needs to be set back a minimum of 50' from Grayback Arroyo.
WRSP-3									
Surface Impoundments	NA	0" to 6"	NA	NA	Blended to natural topography with a min. 1.0%	NA	NA	NA	HDPE liners will be ripped, folded over and buried in place, and impoundments backfilled with clean fill, surface to graded to drain and blend into the natural topography. Surface area to be covered with 6-inches of suitable cover material where unsuitable growth media exists after grading.
Growth Media Stockpiles (GMSPs)									
GMSP-1	NA	0"	NA	NA	Blended to natural topography	NA	NA	NA	The footprint areas of the growth media stockpiles will be graded to drain and recontoured to blend into the natural topography. It is anticipated that the only area that may require cover is GMSP-3 which is underlain by andesitic bedrock. The other two stockpile areas are underlain by alluvial materials (suitable growth media).
GMSP-2		0"							
GMSP-3		Up to 6"							
Tailing Storage Facility (TSF)									
Tailing Storage Facility	Between 3.0H:1.0V and 3.5H:1.0V	36" min.	25'	Between 200 feet (3H:1V) and 250 feet (3.5H:1V)	Between 1.0% and 5.0%	1%	1%	Armored channels designed to convey peak flows from 100-year, 24-hour storm event	The toe of the TSF needs to stay where its at due to the underlying HDPE liner and associated HDPE lined toe berm.

Table E1. Proposed Copper Flat Reclamation Design Criteria (continued)

Facilities to be Reclaimed	Outslope Angle (Interbench)[1,2]	Cover Thickness[3,4]	Bench Width[2,5]	Interbench Slope Length[2,6]	Top Surface Slope[7,8]	Bench Cross Slope[5]	Bench Longitudinal Slope[5]	Surface Water Conveyances[2,9]	Comments
Tailing Storage Facility (TSF)									
Surface Impoundments	NA	0" to 6"	NA	NA	Blended to natural topography with a min. 1.0%	NA	NA	NA	See above description in WRSPs.
Cyclone Plant Area	NA	6" to 36"	NA	NA	Blended to natural topography with a min. 1.0%	NA	NA	NA	All structures and equipment at the cyclone plant will be removed from the site and disposed of in an approved manner according to applicable federal and state laws; concrete foundations will be broken and covered with 36" of growth media; remaining disturbed areas will be graded and covered with 6" of growth media.
Open Pit									
Open Pit	NA	NA	NA	NA	NA	NA	NA	Armored channels designed to convey peak flows from 100-year, 24-hour storm event	Earthen berm will be constructed around the perimeter of the open pit to limit public access and reduce the physical safety hazard. Surface water conveyance channels will be constructed around the perimeter of the pit (immediately upstream of the perimeter berm/security fence) and along the existing haul road to direct surface water around and into the pit. Two small detention basins will be constructed on the western perimeter of the pit to capture and evaporate minimal surface runoff from the west perimeter of the pit. It is assumed there will be an approximate 100-foot-wide disturbance area around the pit that will be ripped and revegetated.
Plant Area									
Buildings and Structures	NA	6" to 36"	NA	NA	Blended to natural topography with a min. 1.0%	NA	NA	Armored channels designed to convey peak flows from 100-year, 24-hour storm event	All fuel tanks, reagent storage facilities, and equipment will be removed from the site and disposed of in an approved manner according to applicable federal and state laws; concrete foundations will be broken, walls toppled, backfilled, and covered with 36" of growth media; remaining disturbed areas will be graded and covered with 6" of growth media.

Table E1. Proposed Copper Flat Reclamation Design Criteria (continued)

Facilities to be Reclaimed	Outslope Angle (Interbench)[1,2]	Cover Thickness[3,4]	Bench Width[2,5]	Interbench Slope Length[2,6]	Top Surface Slope[7,8]	Bench Cross Slope[5]	Bench Longitudinal Slope[5]	Surface Water Conveyances[2,9]	Comments
Plant Area									
Surface Impoundments	NA	0" to 6"	NA	NA	Blended to natural topography with a min. 1.0%	NA	NA	Armored channels designed to convey peak flows from 100-year, 24-hour storm event	See above description in WRSPs.
Pipelines, Pipeline Corridors	NA	0" to 6"	NA	NA	Blended to natural topography with a min. 1.0%	NA	NA	Armored channels designed to convey peak flows from 100-year, 24-hour storm event	Residual sediments and fluids will be flushed from the pipelines and placed in the TSF prior to reclamation of this facility, or at an approved location. Above-ground pipelines will be disposed of in the TSF prior to reclamation of this facility, or at a nearby approved construction and debris landfill. Buried pipelines will be capped at both ends. Surfaces will be graded, ripped and covered with 6-inches of suitable cover material where unsuitable growth media exists.
Electrical Infrastructure	NA	0" to 6"	NA	NA	Blended to natural topography with a min. 1.0%	NA	NA	Armored channels designed to convey peak flows from 100-year, 24-hour storm event	Removal of on-site overhead lines and power poles and disconnect from the 115kV line owned by Tri-State Generation and Transmission. The electrical substation and associated transmission lines will be closed once they are no longer needed. Disturbed surfaces along corridor will be graded, ripped and covered with 6-inches of suitable cover material where unsuitable growth media exists.
Ancillary Facilities									
Pipelines, Pipeline Corridors	NA	0" to 6"	NA	NA	Blended to natural topography with a min. 1.0%	NA	NA	NA	See above description in Plant Area.

Table E1. Proposed Copper Flat Reclamation Design Criteria (continued)

Facilities to be Reclaimed	Outslope Angle (Interbench)[1,2]	Cover Thickness[3,4]	Bench Width[2,5]	Interbench Slope Length[2,6]	Top Surface Slope[7,8]	Bench Cross Slope[5]	Bench Longitudinal Slope[5]	Surface Water Conveyances[2,9]	Comments
Ancillary Facilities									
Surface Impoundments	NA	0" to 6"	NA	NA	Blended to natural topography with a min. 1.0%	NA	NA	NA	See above description in WRSPs.
Mine Access Roads									Access roads not needed for closure and post-closure access will be reclaimed by ripping and revegetating the surfaces. Roads will be covered with 6-inches of suitable cover material where unsuitable growth media exists. Culverts will be removed if they are not needed for post-closure storm water management and disposed of in an approved manner.
Substation and Electrical Transmission Infrastructure	NA	0" to 6"	NA	NA	Blended to natural topography with a min. 1.0%	NA	NA	NA	See above description in Plant Area.
Other Disturbed Areas									Surfaces will be graded, ripped and covered with 6-inches of suitable cover material where unsuitable growth media exists.

Notes:
NA – Not Applicable

OPSDA – Open Pit Surface Drainage Area

[1] – Outslopes will be graded in accordance to 20.6.7.33.C(3) NMAC which states: "The outslopes of all tailing impoundments, waste rock and leach stockpiles at a copper mine facility shall be constructed to an interbench slope no steeper than three horizontal to one vertical (3H:1V). Alternative slope gradients may be allowed within an open pit surface drainage area, or if the permittee provides information showing that the cover performance objectives in Subsection F of this Section are met and the exception is approved by the department."

[2] – For the growth media stockpiles, it is assumed that the majority of the growth media will be used for cover on the reclaimed facilities and that there will be little to no growth media remaining following closure of these facilities (no outslopes, benches, or surface water conveyances).

[3] – Cover systems for the EWRSPs, WRSPs, and TSF will be in accordance to 20.6.7.33.F NMAC which states: "Any cover system installed at an existing copper mine facility after the effective date of the copper mine rule shall be a store and release earthen cover system with a thickness of thirty-six inches…"

[4] – The growth media stockpile areas, disturbed areas, and other ancillary facilities will not require additional cover unless sufficient native growth media is not present in the area (such as area underlain by bedrock). In areas with insufficient residual growth media, an additional six inches of cover material will be added to promote vegetative growth as part of the reclamation plan. The surfaces will be graded to drain and recontoured to blend into the natural topography, the graded area will then be ripped to a depth of between 12 and 18 inches and then seeded.

[5] – In accordance with 19.10.5.507 NMAC "final surface configuration of the disturbed area shall be suitable for achieving a self-sustaining ecosystem or approved post-mining land use".

[6] – Slopes lengths will be in accordance with 20.6.7.33.C(4) NMAC which states: "The maximum uninterrupted slope lengths shall be no greater than 300 feet for 4.0:1, 200 feet for 3:1 slopes and 175 feet for 2.5:1 slopes."

[7] – The top surfaces of the EWRSPs and WRSPs will be graded in accordance to 20.6.7.33C(2) NMAC which states: "The top surfaces of all waste rock and leach stockpiles at a copper mine facility shall be constructed to a minimum final grade of 1%."

[8] – The top surface of the TSF will be graded in accordance to 20.6.7.33. C(1) NMAC which states: "The top surfaces of all tailing impoundments at a copper mine facility shall be constructed to a minimum final grade of 0.5% after accounting for the estimated magnitude and location of large scale settlement due to totaling consolidation or differential settlement."

[9] – Surface water conveyances will be constructed in accordance to 20.6.7.33. A NMAC which states: "Permanent storm water conveyances, ditches, channels, and diversions required for closure of a discharging facility at a copper mine facility shall be designed to convey the peak flow generated by the 100 year return interval storm event."

2.1 Existing Waste Rock Stockpiles

There are four existing waste rock stockpiles at the site, EWRSP-1, EWRSP-2A and 2B, EWRSP-3 and EWRSP-4 (**Figure E2**). The size and volume of the four EWRSPs are listed in **Table E2**.

Table E2. EWRSP Details

Facility	Size[1] (Acres)	Volume[2] (tons)
EWRSP 1	15.34	486,000
EWRSP 2A & 2B	21.06	760,050
EWRSP 3	19.54	333,300
EWRSP 4	22.62	1,000,050

Notes:
[1] – Includes stockpile areas and associated disturbance areas.
[2] – Provided by NMCC

NMCC will conduct contemporaneous reclamation of these EWRSP's to the extent practicable. EWRSP-1 is located at the western edge of the site within the open pit surface drainage area (OPSDA) and contains approximately 324,000 cy of waste rock. EWRSP-2, consists of two waste rock disposal areas and associated disturbed areas (EWRSP-2A and EWRSP-2B) located northeast of the open pit. Combined, these two disposal areas are estimated to contain approximately 506,700 cy of waste rock. EWRSP-3, located immediately east of the QMC crusher foundation and approximately 3,000 feet east of the pit, is estimated to contain approximately 222,200 cy of waste rock and unprocessed ore remaining on-site at the end of Quintana's operations. EWRSP-4 is located southeast of the open pit and contains approximately 666,700 cy of waste rock. NMCC will use a portion of the top surface of EWRSP-4 for an equipment/supply laydown yard during the future mining operations.

EWRSP-1, EWRSP-2B, and a portion of EWRSP-2A will be reclaimed during the pre-production phase of mine operations. EWRSP-3 will be reclaimed at the end of mine life as part of the plant area reclamation. The outslope of EWRSP-4 will also be reclaimed during the pre-production phase of mine operations. The top surface of EWRSP-4 will be regraded to drain toward the open pit to capture and route surface runoff during operations to the mine pit. EWRSP-4 will be reclaimed at the end of mine life after the area is no longer needed for an equipment/supply laydown yard. An earthen berm of growth media will be installed around the perimeter of the EWRSP-4 top surface during mining operations as safety measure for mining equipment operating in the area. It will also prevent surface water run-on onto the top surface from the outer edges of the stockpile and prevent runoff from impacting the reclaimed outslope.

Reclamation designs for the EWRSPs are based on an overall slope of 3H:1V with maximum 200-foot slope lengths. Final reclamation designs for the EWRSPs will be prepared and submitted to the agencies along with CQA/CQC plans within 180 days of submission of a notice of intent to implement the reclamation plan and may adjust the designs presented herein. The reclamation design criteria for the EWRSPs are summarized in **Table E1** and the design strategy for closure of these facilities are described below. Reclamation design drawings for the facilities are presented in **Attachment E1**.

2.1.1 Components To Remain At Closure

There are certain components and related engineering controls associated with the EWRSPs and associated disturbance areas that will be used for post-closure purposes, including:

- The existing Grayback Diversion Channel;
- The clean water diversion channel located at the north perimeter of EWRSP-2B;
- Access for small vehicles for future monitoring of the reclaimed areas; and
- Groundwater monitoring wells and surface water samplers that may be required for post-closure monitoring in accordance with 20.6.7.35.B NMAC.

2.1.2 EWRSP Reclamation and Closure Plan

The approach for reclamation and closure of the EWRSPs is summarized below and the associated reclamation schedule and sequence is summarized in Section 4.0. The reclamation designs for the EWRSPs are detailed in sheets C-001 through C-006, C-015 and C-016 in **Attachment E1**. The approach for reclamation and closure of the EWRSPs include the following:

- Waste rock adjacent to the Grayback Diversion pulled back from EWRSP-1 or moved to provide clear separation between the final toe of the reclaimed stockpile and the bank of the Grayback Diversion channel;
- The portion of the EWRSP-2A that lies within the footprint of proposed WRSP-1 incorporated into this new stockpile;
- The portion of EWRSP-2A located outside of the OPSDA boundary relocated to the top of EWRSP-2B located inside the OPSDA boundary;
- Grading of the EWRSP top surfaces to a final grade of between 1 and 5% to direct storm water to slope drainage channels;
- Grading of the EWRSP outslopes down to an overall slope of 3.0H:1V with maximum uninterrupted slope lengths of 200 feet;
- Covering of the top surfaces and outslopes of the EWRSPs with 36 inches of growth media;
- Construction of two small detention basins on the eastern perimeter of EWRSP-1 to capture and evaporate minimal surface runoff from the western perimeter of the pit to protect surface water runoff from eroding the pit wall. The soils at the bottom of the basin will be compacted to inhibit water from percolating into the underlying rock formation and potentially creating an acid-generating pathway into the pit lake;
- Construction of an earthen protective safety/containment berm around the outer edge of the equipment/supply laydown yard on top of EWRSP-4 to prevent surface water run-on onto the top surface and to provide a safety berm for mining equipment operating in the area;
- Construction of surface water conveyance channels on the top surfaces (where required) to direct surface water off the covered stockpile surfaces. Surface water directed to the OPSDA for the top surfaces and interior slopes of EWRSPs 2B, 3, and 4 and to the exterior for the exterior slopes. Surface water directed to the exterior to Grayback Diversion for the top surfaces and slopes of EWRSP-1;
- Construction of energy-dissipation structures at channel outlets to reduce erosive velocities where necessary. Where possible channels will be constructed to incorporate existing topography, grade controls and exposed inert bedrock to promote long-term integrity of the structures;

- Construction of diversion swales and/or surface water conveyance channels to prevent storm water run on onto the EWRSPs;
- Grading and ripping of the disturbed areas associated with the EWRSPs to provide positive drainage. Where adequate growth media does not exist, areas will be covered with 6-inches of growth media;
- Seeding of covered and disturbed areas to reestablish vegetation using a seed mix approved by the BLM and MMD, seeding of the equipment and material storage area on top of EWRSP-4 will be completed as part of the plant area reclamation; and
- Installation, operation, and maintenance of groundwater monitoring wells that may be required for post-closure monitoring in accordance with 20.6.7.35.B NMAC.

2.2 Proposed Waste Rock Stockpiles

Waste rock will be hauled from the mine pit and placed in three proposed new waste rock stockpile (WRSP) areas shown on **Figure E3**. The planned sizes and capacities of the three WRSPs at the end of mine life are listed in **Table E3**.

Table E3. Proposed WRSP Details

Facility	Size[1] (Acres)	Storage Volume[2] (MT)
WRSP 1	39.71	3.16
WRSP 2	48.78	8.64
WRSP 3	121.35	32.89

Notes:
[1] – Includes stockpile areas and associated disturbance areas.
[2] – Provided by NMCC
MT – Million tons

Proposed waste rock stockpiles WRSP-1, WRSP-2 and WRSP-3 will be constructed in areas of the site that are completely underlain by andesite bedrock, a geologic formation that has a transmissivity of less than 10^{-6} centimeters per second (SRK, 2013). The proposed WRSPs will cover approximately 210 acres at final built-out, and will be constructed by end dumping in lifts approximately 75 feet high. The outslopes of the stockpiles will be built at angle of repose with benches sufficiently wide enough on each lift to allow grading the final slope and allow sufficient space for cross slope ditches.

Reclamation of the WRSP areas will be completed after the cessation of mining operations. However, select areas may be reclaimed contemporaneous during mine operations. NMCC is committed to maximizing contemporaneous reclamation activities, to the extent practicable, at the Copper Flat Project that will reduce erosion, provide early impact mitigation, limit costs and reduce final reclamation work. For example, portions of WRSP-3 may begin to be reclaimed by regrading and contouring of the WRSP beginning on the north side and proceeding south after the area is filled to capacity at the end of mining. Also, some roads that are no longer required for operations may be decommissioned and reclaimed contemporaneously during the active mining operation. Reclamation efforts will be implemented as soon as practicable in areas where activities are discontinued. This includes recontouring, scarifying, placement of topdressing or other approved growth media, followed by revegetation.

Reclamation designs for the proposed WRSP-2 and WRSP-3 are based on an inter-bench slope of 3.0H:1V, 25-foot wide terrace benches, and maximum 200-foot inter-bench slope lengths to allow for flexibility in the final design of the terrace benches. With these designs, the overall outslope gradient from the crest to toe is generally 3.5H:1V. For WRSP-1, which is located within the OPSDA, reclamation designs are based on an inter-bench slope of 2.75H:1V, 25-foot wide terrace benches, and maximum 200-foot inter-bench slope lengths. With these designs, the overall outslope gradient from the crest to toe for WRSP-1 ranges between 3.0H:1V and 3.5H:1V. Final reclamation designs for the WRSPs will be prepared and submitted to the agencies along with CQA/CQC plans within 180 days of submission of a notice of intent to implement the reclamation plan and may adjust the overall slopes presented herein. The reclamation design criteria for the proposed WRSPs are summarized in **Table E1** and the design strategy for closure of these facilities are described below. Reclamation design drawings for the facilities are presented in **Attachment E1**.

2.2.1 Components To Remain At Closure

The closure components and related engineering controls associated with the proposed WRSPs and stockpile areas that will be used for post-closure purposes include:

- Access for small vehicles maintained for future monitoring of the reclaimed areas; and
- Groundwater monitoring wells and surface water samplers that may be required for post-closure monitoring in accordance with 20.6.7.35.B NMAC.

2.2.2 WRSP Reclamation and Closure Plan

The approach for reclamation and closure of the WRSPs is summarized below and the associated reclamation schedule and sequence is summarized in Section 4.0. The reclamation designs for the WRSPs are detailed in sheets C-007 through C-010 in **Attachment E1**. The approach for reclamation and closure of the WRSPs include the following:

- Grading of the proposed WRSP top surfaces to a final grade of between 1 and 5% to direct storm water to slope drainage channels;
- Grading of proposed WRSP-2 and WRSP-3 outslopes down to interbench slopes of 3.0H:1V;
- Construction of 25 foot wide terrace benches on the outslopes of proposed WRSP-2 and WRSP-3 at maximum slope lengths of 200 feet;
- Grading of proposed WRSP-1 outslopes down to interbench slopes of 2.75H:1V;
- Construction of 25 foot wide terrace benches on the outslopes of proposed WRSP-1 at maximum slope lengths of 200 feet;
- Covering of the top surfaces and outslopes of the proposed WRSPs with 36 inches of growth media;
- Construction of surface water conveyance channels on the top surfaces (as needed), terrace benches, and downslope channels to direct surface water off the covered stockpile surfaces. Surface water will be directed to the OPSDA for the top surfaces and interior slopes of WRSP-1 and WRSP-2, and to the exterior of the mine for WRSP-3;

- Construction of diversion swales and/or surface water conveyance channels to prevent storm water run on onto the stockpiles;
- Construction of energy-dissipation structures at channel outlets to reduce erosive velocities where necessary. Where possible channels will be constructed to incorporate existing topography, grade controls and exposed inert bedrock to promote long-term integrity of the structures;
- Grading of the disturbed areas associated with the stockpiles to provide positive drainage;
- Seeding of covered and disturbed areas to reestablish vegetation using a seed mix approved by the BLM and MMD; and
- Installation, operation, and maintenance of groundwater monitoring wells that may be required for post-closure monitoring in accordance with 20.6.7.35.B NMAC.

2.3 Tailings Storage Facility

The proposed TSF will include an HDPE-lined tailings impoundment with an associated underdrain collection system and underdrain collection pond for the impoundment and the dam, and a water reclaim system to maximize water reuse. The TSF will also include a cyclone plant to separate the tailings coarse and fine fractions and a surge pond to handle potential upset conditions at the Copper Flat Project. The proposed TSF and associated ancillary facilities will cover approximately 564 acres at full capacity (**Figure E3**) and will be constructed using the centerline construction method. The proposed TSF design will comply with the design and dam-safety guidelines of the New Mexico Office of the State Engineer (OSE) Dam Safety Bureau. The tailings impoundment is designed to store 113 million tons of tailings produced over approximately 11 years, with tailings deposition occurring at an average rate of approximately 27,900 tons per day over the life of the mine. Additional details on the TSF design are provided in the Feasibility Level Design Report for the TSF (Golder, 2015).

The Feasibility Level Design Report for the TSF indicates that the maximum down-drain flow rate at final buildout of the dam is anticipated to be approximately 448 gallons per minute (gpm) from the dam underdrain and 66 gpm from the impoundment underdrain. The TSF embankment (dam) will be constructed of cyclone underflow sand fill which is coarser and has a higher permeability than the cyclone overflow material that is deposited within the TSF impoundment. This means that the TSF embankment will drain quickly in comparison to the impoundment and is, therefore, anticipated to undergo reclamation sooner than the impoundment surface. It is currently estimated that it will take approximately 2 to 3 years for the TSF embankment to drain sufficiently to begin reclamation. It is also anticipated that some reclamation of the impoundment can begin within 5 years of cessation of operations as the impoundment continues to drain and dry, allowing construction equipment to be utilized to commence cover placement. The underdrain systems will continue to operate after cessation of operations. An “active” underdrain water management program will commence thereafter, including pumping captured water from underdrain collection pond back to the impoundment surface of the TSF and use of forced or enhanced evaporation equipment to reduce the volume of the water. The duration of continued operation of the “active” water management system will, be driven by the volume of water that continues to drain from the impoundment.

For planning purposes NMCC has assumed that there will be 5 years of operation of the active program followed by 20 years of "passive" drain-down water management. After decommissioning of the active program and full reclamation of the TSF, any water that may continue to drain from the TSF (at ever decreasing rates for an estimated 20 years) will be captured in an evaporation pond that will be constructed below the toe of the TSF within the mine permit area. The underdrain collection pond will be incorporated into this evaporation pond. Details of the TSF drain-down water management program, including the design of the evaporation ponds, are included in **Attachment E2**.

Reclamation designs for the proposed TSF are based on an inter-bench slopes ranging between of 3H:1V and 3.5H:1V, 25-foot wide terrace benches, and inter-bench slope lengths of between 200 feet (3H:1V) and 250 feet (3.5H:1V). With these designs, the overall outslope gradient from the crest to toe ranges between approximately 3.0H:1V and 3.6:1V. Final reclamation designs for the TSF will be prepared and submitted to the agencies along with CQA/CQC plans within 180 days of submission of a notice of intent to implement the reclamation plan and may adjust the overall slopes presented herein. The reclamation design criteria for the proposed TSF are summarized in **Table E1** and the approaches for closure of this facility are described below. Reclamation design drawings for the TSF are presented in **Attachment E1**.

2.3.1 Components To Remain At Closure

The closure components and related engineering controls associated with the TSF area that will be used for post-closure purposes include:

- Access for small vehicles maintained for future monitoring of the reclaimed areas; and
- Groundwater monitoring wells and surface water samplers that may be required for post-closure monitoring in accordance with 20.6.7.35.B NMAC.

2.3.2 TSF Reclamation and Closure Plan

The approach for closure of the proposed TSF is summarized below and the associated reclamation schedule and sequence is summarized in Section 4.0. The reclamation designs for the TSF are detailed in sheets C-011 and C-012 in **Attachment E1**. The approach for closure of the TSF is outlined below. The approach contains two fundamental components to successful completion of reclamation, i.e., a short-term active or forced water evaporation component and a long-term passive operation component. Utilization of active evaporation will allow the cover to begin to be placed on those areas of the top of the impoundment that become sufficiently "dry" to accept machinery. The goal of the active phase of evaporation is to dry the top of the impoundment as soon as possible to allow as much of the cover to be placed as possible, and eventually placing all of the cover on the impoundment. The active evaporation phase includes the following:

- Maintain the HDPE-lined runoff collection trench constructed at the toe of the dam to capture surface water runoff from the outer slopes of the dam and route it to the TSF underdrain collection pond prior to cover placement on the TSF embankment. Following

cover placement on the embankment, surface water runoff will be routed to the nearest natural drainage;

- The storm water diversion ditches will be maintained to limit surface water run on onto the TSF;
- The TSF underdrain collection system will be maintained to collect drain down water from the TSF and direct it to the TSF underdrain collection pond during the active evaporation period;
- Maintenance of the HDPE-lined runoff collection trench at the toe of the dam to capture surface water runoff from the outer slopes of the TSF and route it to the TSF underdrain collection pond prior to cover placement, and to an offsite drainage after cover placement on the outslope;
- Maintenance of the HDPE-lined TSF underdrain collection pond and associated pumps and piping to collect drain down and storm water runoff from the TSF (prior to cover placement) and direct it to the top of the TSF for active evaporation, or for direct passive evaporation within the pond;
- Grading of the TSF embankment outslope down to interbench slopes of between 3.0H:1V and 3.5H:1V (estimated to begin 2-3 years after cessation of operations);
- Construction of 25 foot wide terrace benches on the outslope of the TSF embankment at maximum slope lengths of between 200 feet (3H:1V) and 250 feet (3.5:1V);
- Covering of the embankment outslopes of the TSF with 36 inches of growth media and seeding;
- Begin grading of TSF impoundment as conditions allow (estimated to begin within 5 years of cessation of operations). Placement of growth media cover to the extent possible as conditions allow;
- Closure of surge pond at the cyclone plant as described in Section 2.6;
- All structures, tanks, storage facilities, buildings and equipment will be removed from the cyclone plant and TSF areas and disposed of in an approved manner according to applicable federal and state laws;
- Concrete foundations will be broken and covered with 36 inches of growth media;
- Pipelines will be removed or capped as described below in Section 2.8.
- The electrical power systems and associated transmission lines will be removed once they are no longer needed as described below in Section 2.8.
- Grading and ripping of the disturbed areas associated with the cyclone plant area to provide positive drainage. Where adequate growth media does not exist, areas will be covered with 6-inches of growth media;
- Seeding of covered and disturbed areas to reestablish vegetation using a seed mix approved by the BLM and MMD;
- Construction of HDPE–lined evaporation pond for management of long term drain down water from the TSF through passive evaporation at end of active evaporation phase. (This includes consolidation of the underdrain collection pond into the evaporation pond system).

Upon completion of placement of the cover on the impoundment, active evaporation will no longer be necessary. However, the impoundment will continue to drain at an ever-decreasing rate, requiring that it continue to be captured and treated. A passive evaporation phase will be implemented so that captured drain-down water can continue to be managed through evaporation and the water not be placed on the

clean impoundment cover. For planning purposes it is assumed that the passive evaporation phase may last as long as 20 years after cessation of operations. NMCC, in coordination with the MMD, NMED and BLM, will determine when sufficient drain down has occurred to allow closure and reclamation of the passive evaporation system. The passive evaporation phase includes the following;

- The TSF underdrain collection system maintained to collect continued drain down water long-term, from the TSF and direct it to the evaporation pond during the passive evaporation period;
- Continue grading of the TSF top surface to a final grade of between 1 and 5% to direct storm water to the back side of the TSF;
- Complete covering of the top surfaces of the TSF with 36 inches of growth media and seeding, as conditions allow;
- Construction of surface water conveyance channels on the top surface of the TSF and outlet structure from the top of the TSF to Grayback Arroyo to direct surface water off the covered TSF surfaces. Surface water will be directed to Grayback Arroyo and other natural drainages upon completion of cover placement;
- Construction of energy-dissipation structures at channel outlets to reduce erosive velocities where necessary. Where possible channels will be constructed to incorporate existing topography, grade controls and exposed inert bedrock, which will promote long-term integrity of the structures;
- Grading of the disturbed areas associated with the TSF to provide positive drainage;
- Seeding of covered and disturbed areas to reestablish vegetation using a seed mix approved by the BLM and MMD;
- Installation, operation and maintenance of groundwater monitoring wells that may be required for post-closure monitoring in accordance with 20.6.7.35.B NMAC;
- The TSF evaporation pond will remain in place until drain down from the facility is reduced to a point to where it is no longer required for passive evaporation of these waters. This point in time will be determined in collaboration with the Agencies; and
- The evaporation pond will be reclaimed once it is no longer needed as described below in Section 2.6.2.

2.4 Open Pit

The open pit will be mined with pit benches ranging between 16 and 28 feet wide, creating a terraced/benched pit wall. Over the 11-year life of the proposed project, approximately 113 million tons of copper ore and 45 million tons of waste rock will be mined and removed from the open pit. The proposed mining activities will enlarge the open pit over time to a diameter of approximately 2,800 feet and an area of approximately 165 acres (including pit perimeter disturbed area). The floor of the proposed open pit will be mined to an elevation of approximately 4,650 feet above mean sea level (AMSL), which will be approximately 900 feet beneath the original surface of the Copper Flat Basin in this area.

The open pit will remain a hydrologic sink capturing groundwater flowing from all directions during operations and post-closure (JSAI, 2012; JSAI, 2013; JSAI, 2014; JSAI, 2014b; JSAI, 2014c; JSAI, 2015). NMCC will conduct rapid filling of the mine pit with water provided from the off-site well field as the initial

step in commencing reclamation/closure. The purpose of rapid filling of the pit is to provide a source of good quality water and provide a mechanism by which the mineralized rock walls of the pit will be more quickly submerged under water, thus limiting the potential for mineral oxidation. Approximately 2,800 acre-feet of water will be required for the rapid fill, pumping into the pit over approximately 7 months. Thereafter, pumping water for rapid fill will be discontinued and the elevation of the pit lake will reach an average steady-state condition of 4,900 feet above MSL over the long-term. Surface water runoff from the reclaimed facilities located within the OPSDA will be routed into the pit. Surface water conveyance channels will be constructed around the northern and eastern pit perimeter to direct surface runoff water into the pit. Two small surface water detention basins will be constructed along the western perimeter of the pit to capture and evaporate minimal surface runoff from the west perimeter of the pit. These features will limit the potential for erosion into and around the pit, provide stability to the pit walls, and provide riparian habitat to replace that lost in the mining operation.

The reclamation design criteria for the open pit are summarized in **Table E1** and the design strategy for closure of this facility are described below. Reclamation design drawings for the open pit are presented in **Attachment E1**.

2.4.1 Components To Remain At Closure

The closure components and related engineering controls associated with the open pit area that will be used for post-closure purposes include:

- Maintenance of existing storm water diversion structures to limit surface water run on into the open pit;
- Access for small vehicles maintained on the portion of the haul road remaining following construction of the open pit conveyance channel for future monitoring within of the open pit; and
- Groundwater monitoring wells in the vicinity of the open pit that may be required for post-closure monitoring in accordance with 20.6.7.35.B NMAC.

2.4.2 Mine Pit Reclamation and Closure Plan

The approach for closure of the open pit is summarized below and the associated reclamation schedule and sequence is summarized in Section 4.0. The reclamation designs for the open pit area are detailed in sheets C-013 and C-014 in **Attachment E1**. The approaches for closure of the open pit area include the following:

- Rapid filling of the pit with 2,800 acre-feet of water from the off-site well field over a period of approximately 7 months;
- Construction of an earthen berm around the perimeter of the open pit to limit public access and ensure that the pit area does not pose a current or future hazard to public health or safety. The berm will be constructed from local rock and soils and will be 15 to 20-foot wide and 5- to 6-feet high with side slopes angled at 1.5H:1V;

- Construction of surface water conveyance channels around the perimeter of the pit (immediately upstream of the perimeter berm/security fence) to direct surface water around the pit and to the newly constructed open pit conveyance channel;
- Construction of the open pit conveyance channel along the existing haul road to direct surface water flows from around the perimeter of the pit to the pit lake;
- Construction of energy-dissipation structures at channel outlets to reduce erosive velocities where necessary. Where possible the channels will be constructed to incorporate existing topography, grade controls and exposed inert bedrock, which will promote long-term integrity of the structures;
- Grading of the disturbed areas associated with the pit perimeter, perimeter channels, and safety berm construction. It is assumed there will be an approximate 100-foot-wide disturbance area around the pit;
- Removal of aboveground electrical systems and infrastructure, including pumps, lighting and transmission lines not necessary for post-closure site operations and maintenance;
- Installation of a security gate at the haul road entrance into the pit to allow access for operation, maintenance, and monitoring activities to authorized personnel;
- Installation of a barbed wire fence around the outside perimeter of the pit to exclude livestock and other large mammals;
- Signs will be posted at 500-ft intervals along the security fence/earthen berm and at all access points, warning of potential hazards present;
- Seeding of disturbed areas around the pit perimeter to reestablish vegetation using a seed mix approved by the BLM and MMD; and
- Installation, operation, and maintenance of groundwater monitoring wells that may be required for post-closure monitoring in accordance with 20.6.7.35.B NMAC.

2.5 Plant Area

The Copper Flat plant area will cover an area of approximately 82 acres located southeast of the existing open pit (**Figure E3**). The plant area includes the process area, primary crusher, concentrator area, laydown yard, administration/warehouse/mine shop, water tanks, process water reservoir, impacted stormwater impoundment A, tailings and process water conveyances, ancillary roadways, haul roads on the northern and southern/southwestern portion of the area, parking lot, wastewater treatment facility, fuel station, truck wash, and facilities supporting the process area. Additionally, due to its physical location within the plant area, an additional 23 acres which include EWRSP-3 will be incorporated into grading and drainage reclamation plan for the plant area.

At closure, all surface facilities, equipment and buildings will be removed from the area. The foundations associated with these structures will be buried in place. The slopes of the land bridge will be stabilized and the top revegetated during reclamation. The land bridge currently supports a wetland area, estimated to be 1.5 acres in size, and will be maintained as part of the closure plan. The reclamation design criteria for the plant area are summarized in **Table E1** and the approach for closure of this facility area is described below. Reclamation design drawings for the plant area are presented in **Attachment E1**.

2.5.1 Components To Remain At Closure

The closure components and related engineering controls associated with the plant area that will be used for post-closure purposes include:

- The Grayback Diversion Channel located along the southern perimeter of the plant area;
- The land bridge which conveys the tailings pipeline along the southeast corner of the area;
- Access for vehicles maintained following regrading EWRSP-3 and the access road on the western portion of the plant area for future monitoring and maintenance activities. Access through the plant area to the open pit and WRSPs north and west of the plant area, and for access to public and private lands north and west of the mine property; and
- Groundwater monitoring wells in the vicinity of the plant area that may be required for post-closure monitoring in accordance with 20.6.7.35.B NMAC.

2.5.2 Plant Process Area Reclamation and Closure Plan

The approach for closure of the plant area summarized below and the associated reclamation schedule and sequence is summarized in Section 4.0. The reclamation designs for the plant area are detailed in sheets C-015 and C-016 in **Attachment E1**. The approach for closure of the plant area includes the following:

- All fuel tanks, reagent storage facilities, buildings and equipment will be removed from the site and disposed of in an approved manner according to applicable federal and state laws;
- Concrete foundations will be broken, walls toppled, backfilled, and covered with 36 inches of growth media;
- Closure of the process water reservoir and impacted storm water impoundment A as described below in Section 2.6.
- Pipelines will be removed or capped as described below in Section 2.8.
- The electrical substation and associated transmission lines will be removed once they are no longer needed as described below in Section 2.8.
- Ripping and grading of the disturbed areas associated with the plant area following burial of concrete foundations, slabs, and footings to provide positive drainage;
- Grading of EWRSP-3 top surface to a final grade of between 1 and 5% to direct storm water to slope drainage channels;
- Grading of the EWRSP-3 outslope down to a slope of 3.0H:1V;
- Covering of the top surface and outslope of the EWRSP-3 with 36 inches of growth media;
- Covering of ripped and graded disturbed areas with 6-inches of growth media;
- Construction of surface water conveyance channels to direct surface water off the covered surfaces. Surface water runoff will be directed to Grayback Arroyo;
- Construction of energy-dissipation structures at channel outlets to reduce erosive velocities where necessary. Where possible channels will be constructed to incorporate existing topography, grade controls and exposed inert bedrock, which will promote long-term integrity of the structures;
- Seeding of covered and disturbed areas to reestablish vegetation using a seed mix approved by the BLM and MMD; and

- Installation, operation, and maintenance of any additional groundwater monitoring wells that may be required for post-closure monitoring in accordance with 20.6.7.35.B NMAC.

2.6 Surface Impoundments

Table E4 presents a summary of the surface impoundment list for the Copper Flat Project. There will be 6 surface impoundments present at Copper Flat at the end of mine life; 3 impacted storm water impoundments, one process water reservoir, one surge pond and one underdrain collection pond. The seventh impoundment will be a passive evaporation pond constructed after mine closure to provide long-term passive evaporation of residual fluid drainage from the TSF.

Table E4. Summary of Copper Flat Surface Impoundments

Impoundment	Size[1] (Acres)	Storage Volume[2] (Gallons)
Impacted Storm Water Impoundment A	2.90	7,306,971
Impacted Storm Water Impoundment B	2.69	5,598,421
Impacted Storm Water Impoundment C	4.44	10,513,870
Process Water Reservoir	2.12	5,433,849
Surge Pond	1.86	1,610,000
TSF Underdrain Collection Pond	7.90	12,240,000
TSF Evaporation Pond	21.60	21,934,379

Notes:
[1] –Surface impoundment areas also include disturbed areas (embankment, access road, etc) associated with each impoundment.
[2] – Surface impoundment storage volumes account for 2-feet of freeboard.

Typically the surface impoundments will be the last features to be closed at their respective locations after grading and cover placement of the adjacent facilities (e.g., WRSPs, TSF, plant area, mine pit).

2.6.1 Components To Remain At Closure

The closure components and related engineering controls associated with the surface impoundments that will be used for post-closure purposes include:

- Groundwater monitoring wells in the vicinity of the plant area that are required for post-closure monitoring in accordance with 20.6.7.35.B NMAC.

2.6.2 Surface Impoundment Reclamation and Closure Plan

All of the surface impoundments will be reclaimed after the facilities they services are reclaimed. The TSF underdrain collection pond will continue to collect water that drains from the TSF during the active evaporation phase discussed above and will be incorporated into a single evaporation pond constructed for the management of water collected during the passive evaporation phase. The evaporation pond will be constructed below the toe of the TSF to allow for passive evaporation of any residual drain down water from the TSF. The evaporation pond will remain in place until drain down from the TSF facility is reduced to a point to where it is no longer required. This point in time will be determined in collaboration with the

Agencies and the pond will be reclaimed thereafter. The reclamation and closure activities for the surface impoundments consist of the following:

- Flushing of all process water pipelines to remove residual solutions and disposing of the solutions in the TSF to evaporate;
- Removing and disposing of the above-ground process pipelines in the TSF or at a nearby approved construction and debris landfill;
- Pumping of remaining water in the impoundments into the TSF to evaporate;
- Removal of all above ground impoundment electrical systems, pumps, and infrastructure, including outdoor lighting and transmission lines;
- Capping all buried process water, tailings delivery, and water delivery pipelines;
- Ripping surface impoundment HDPE liners and folding over prior to backfilling;
- Grading impoundment berms into and backfilling the impoundments with clean fill, as necessary, in lifts and compacting each lift;
- Grading the backfilled areas to drain and recontour surfaces to blend into the natural topography;
- Covering of impoundments with 6-inches of suitable cover material where unsuitable growth media exists after grading;
- Seeding of covered and disturbed areas to reestablish vegetation using a seed mix approved by the BLM and MMD; and
- Installation, operation, and maintenance of groundwater monitoring wells that may be required for post-closure monitoring in accordance with 20.6.7.35.B NMAC.

2.7 Growth Media Stockpiles

The term “growth media” as referred to within this Plan is equivalent to topdressing as defined in 19.10.1.7.T(1) NMAC. **Figure E3** identifies the location of three growth media stockpiles (GMSP-1, GMSP-2, and GMSP-3) established as part of the site development and construction phases of operation. GMSP-1 will be located at the southwest corner of the proposed TSF, GMSP-2 will be located north of the proposed TSF and north of Grayback Arroyo, and GMSP-3 will be located east of WRSP-3. Combined these stockpiles will contain an estimated 4.5 million cy of suitable growth media/cover material (**Table E5**).

Table E5. Proposed Growth Media Stockpile Details

Facility	Size[1] (Acres)	Storage Volume[2] (cy)
Growth Media Stockpile 1	29.33	2,180,000
Growth Media Stockpile 2	31.55	1,813,000
Growth Media Stockpile 3	14.10	508,000

Notes:
[1] – Includes stockpile areas and associated disturbance areas.
[2] – Provided by NMCC
cy – Cubic yards

The growth media stockpile material will be consumed as part of the cover systems associated with reclamation of the site. After moving this material from the stockpiles to its location of use in reclamation, there will be a need to also reclaim the area disturbed at the stockpile location. There may be a need to

leave a minimum of 6 inches of growth media material in place to provide for seeding the disturbed stockpile area. The design criteria associated with reclamation of any remaining growth media stockpile material that may be present following closure of these facilities, and the disturbed areas associated with the growth media stockpiles are summarized in **Table E1**, and the planned approach for closure of these facilities is described below.

2.7.1 Growth Media Stockpile Reclamation and Closure Plan

The approach for closure of any residual growth media stockpile material that may be present following closure of the facilities described in Sections 2.1 through 2.6 above, and the disturbed areas associated with the growth media stockpiles includes the following:

- Grading remaining growth media material and disturbed areas to drain and re-contour surfaces to blend into the natural topography;
- Ripping of the remaining growth media and disturbed areas to a depth of between 18 and 24 inches;
- Leave a minimum of six inches of growth media material in place, as needed, within the stockpile footprints. The only area that may require a minimum of six inches of residual stockpiled growth media to remain within the stockpile footprint is GMSP-3 which is underlain by andesitic bedrock. The other two stockpile areas (GMSP-1 and GMSP-2) are underlain by alluvial materials (suitable growth media); and
- Seeding of remaining growth media and disturbed areas to reestablish vegetation using a seed mix approved by the BLM and MMD.

2.8 Ancillary Facilities and Structures

A miscellaneous group of ancillary facilities and structures will be present within the Copper Flat mine permit area including: access roads utilized during operations; HDPE pipelines and trenches; electrical power distribution system and components; storm water structures for drainage, diversion, and sediment control; equipment storage areas; and fencing. The Copper Flat project also includes several off-site facilities that are integral to the project, including an electrical substation located on 30 acres of land owned by the State of New Mexico, nine separate 5-acre mill-site claim sites associated with the well field and an approximate 8-mile long fresh water buried pipeline contained in approximately 53 acres, 45 of which are off the site boundary.

Reclamation of the disturbed areas associated with the ancillary facilities and structures will be accomplished by burying utility and structure foundations, removing and disposing of above-ground pipelines and power lines on-site, and removing all buildings erected by NMCC. Erosion and drainage control and revegetation of these areas will be provided as necessary. Surface disturbance at the five acre mill sites will be reclaimed. The buried fresh water pipeline will be left in place. No reclamation will be required as the pipeline corridor contains natural vegetation consistent with the surrounding environs. The electrical substation will be the property of the service provider. It is assumed that the substation will continue to provide local infrastructure power supply to the area well beyond the time of cessation of

operation of the mine. As such, no reclamation requirement is contemplated. The closure components and the closure activities for the ancillary facilities and structures are described below.

2.8.1 Components to Remain At Closure

The closure components and related engineering controls associated with the ancillary facilities and structures that will be used for post-closure purposes include:

- On-site power poles may be left in place to the extent possible as bird perching sites;
- Continued utilization of access roads for post closure access to the pit bottom and reclaimed facilities for reclamation monitoring and long-term access to public and private lands;
- Continued utilization of storm water control structures located along post-closure haul roads and access roads;
- The existing 115-kV transmission line and the electrical substation constructed on State land will be left in place. The local power utility owns these facilities and will be responsible for their continued operation and maintenance; and
- Preservation of existing water supply pipeline from four production wells located off-site on BLM land. The wells will remain in a condition suitable for other uses. All roads, power lines and foundations for the production wells are in place. No additional disturbance will occur during mining operations, with the exception of occasional minor disturbance that may occur during inspection and maintenance. Such disturbances will be repaired and reclaimed as they may be needed during operations. Surface structures and equipment will be removed and the well area will be left as it currently exists after closure of the mine.

2.8.2 Ancillary Facilities and Structures Reclamation and Closure Plan

The design criteria for the ancillary facilities and structures are summarized in **Table E1** and the approach for closure includes:

- Haul roads and access roads not needed for closure and post-closure access will be reclaimed. The compacted road material will be loosened by ripping to a depth of between 18 and 24 inches and revegetated using a seed mix approved by the BLM and MMD. Covering of haul roads with 6-inches of suitable cover material where unsuitable growth media exists after ripping and revegetated using a seed mix approved by the BLM and MMD;
- Removal of culverts not needed for post-closure storm water management and disposal of them in an approved manner;
- Removal of overhead lines and power poles and disconnect from the 115kV line owned by Tri-State Generation and Transmission;
- Removal of pumping stations and on-site electrical substation once they are no longer needed for post-closure water management;
- Removal of residual sediments and fluids from pipelines and disposal of materials in the TSF prior to reclamation of this facility, or at an approved location;
- Removal and disposal of the above-ground pipelines in the TSF prior to reclamation of this facility, or at a nearby approved construction and debris landfill;
- Capping all buried pipelines;
- Ripping HDPE liners within corridors;

- Backfilling of pipeline corridor trenches with clean fill, as necessary, in lifts and compacting each lift;
- Grading the backfilled areas to drain and recontour surfaces to blend into the natural topography;
- Covering of pipeline corridors with 6-inches of suitable cover material where unsuitable growth media exists after grading;
- Ripping of non-impacted disturbed areas to a depth of 18 to 24 inches; and
- Seeding of ripped and covered areas to reestablish vegetation using a seed mix approved by the BLM and MMD;

2.9 Post-Mining Land Use

The NMMA Rules (MMD 1996) defines Post-Mining Land Use (PMLU) as:

> "a beneficial use or multiple uses which will be established on a permit area after completion of a mining project. The PMLU may involve active management of the land. The use shall be selected by the owner of the land and approved by the Director [of MMD]. The uses, which may be approved as PMLUs, may include agriculture, commercial or ecological uses that would ensure compliance with Federal, State or local laws, regulations and standards and which are feasible." 19.10.1.7. P (5) NMAC

The major land uses in the vicinity of the project area are mining, grazing, wildlife, watershed and recreation, particularly on federal lands. This multiple land management strategy concurs with the BLM administrative directives and resource management plans. Land use in the project area will not change from pre-mining approved purposes and the project area will continue to support these approved uses following closure. Post-closure land uses at Copper Flat will conform to the previously defined BLM Caballo Planning Unit, the 1986 White Sands Resource Management Plan (BLM, 1986) and the Sierra County Comprehensive Land Use Plan.

Grazing land, wildlife habitat, recreation, and mining are the PMLUs most consistent with the surrounding land uses of the Copper Flat site. NMCC will reclaim all disturbed areas in the permit boundary to support the multiple uses of grazing, wildlife habitat, and mining consistent with current BLM land uses. At completion of mining activities, the site will be reclaimed to a native plant community similar to surrounding undisturbed areas. Reclamation will result in the development of an early-stage grass/shrub community that will provide a locally-important increase in landscape-level (plant community) diversity. Native vegetation established on reclaimed areas at Copper Flat will result in increased erosion protection, habitat improvement, forage production, and reduced net infiltration of water into the underlying materials relative to current conditions.

The open pit area will be reclaimed to the extent practicable to a wildlife habitat. A water conveyance channel will be constructed along the existing pit haul road to direct surface water flows to the pit lake. As a rule, catch benches left in pit walls and/or inaccessible benches will not be revegetated after mining for safety reasons. Safety protocols do not permit personnel or equipment to operate below a highwall, in areas

with no safe access, or at the rim of the open pit. These areas will be allowed to revegetate themselves through natural processes. The open pit walls and benches will become wildlife habitat providing abundant rock outcroppings and cliff habitat suitable for small mammals, reptiles and birds.

3.0 IMPLEMENTATION OF RECLAMATION AND CLOSURE PLAN

At completion of mining activities, Copper Flat will be reclaimed according to the reclamation and closure plan described in Section 2.0 and the site will be restored to conditions to meet post-mining land uses of wildlife habitat, grazing land, recreation, and mining consistent with the BLM land management plan (BLM, 1986). The focus of this section is to detail regrading operations, growth media placement and the revegetation plan including planting techniques and proposed seed mixes.

3.1 Growth Media Placement

The use of the term “growth media” herein is synonymous with the term ‘topdressing” as defined in the Mining Act regulations. The major guiding elements in developing the grading plans for the major facility areas and ancillary facilities at Copper Flat are to achieve positive drainage, facilitate constructability and the efficient conveyance of water and limit slope length and gradient, soil erosion and eliminate long-term maintenance requirements. Prior to cover placement, top surfaces and disturbed areas will require minor grading to fill rills, enable the construction of surface water control features and ensure that the final grade is between 1 and 5 percent for reclaimed waste storage units, and graded to blend into the natural topography for other disturbed areas. More extensive grading will be required on the slopes to achieve the desired slope configuration, smooth the bed materials and accommodate surface water control features.

Once facilities are regraded, cover materials will be hauled from growth media stockpiles and placed on the top surface and slopes using a variety of equipment including scrapers or haul trucks. Bulldozers and motor graders will be used to smooth the surfaces and facilitate access for cover placement and revegetation activities. Reclamation of EWRSP-1, EWRSP-2B, a portion of EWRSP-2A and the outslope of EWRSP-4 will occur during the pre-production phase of mine operations. Suitable growth media for these existing facilities will be excavated from TSF and/or WRSP-2 and -3 borrow areas and hauled directly as part of the plans to reclamation contemporaneously during the pre-production phase of mine operations (Section 2.1).

The cover system will be designed to provide erosion control, sustain vegetation and reduce net infiltration of stormwater through the underlying materials. The soil cover will be a monolithic store and release/evapotranspiration system. Where mine wastes are present (EWRSPs, WRSPs, and TSF) soil covers will be 36 inches thick, and other disturbed areas that do not have adequate growth media already in place will covered with 6-inches of soil. The covers will be designed to be protective of groundwater, resist erosion and support vegetation. Growth media to construct the cover will be spread and graded with care taken to prevent compaction by limiting the number of passes.

NMCC will construct the soil covers in single lift. However, there may be occasions during cover construction when the subsurface and surface cover materials may be placed in separate operations. In these instances, NMCC will place coarser textured growth media materials in the surface lift, particularly on outslopes. Coarser textured soils materials are expected to have better performance related to their

ability to resist erosion and capture water (high infiltration capacity) during high intensity precipitation events that occur during the summer monsoons (Golder, 2013).

Growth media will be placed at a depth of at least 6 inches in all other disturbance areas. GMSP-1 and -2 are underlain by alluvial deposits that are suitable growth media. As such, the existing deposits underlying these stockpiles will simply be graded, scarified, and reseeded. Removal of growth media from GMSP-3 may expose bedrock that will require a minimum of 6 inches of stockpiled growth media to remain within the stockpile footprint prior to reseeding. **Table E6** provides an estimate of the volume of growth media required for reclamation.

Table E6: Estimated Reclamation Cover Requirements

Facility	Regraded Surface Area[1] (acres)	Cover Thickness (ft)	Growth Media Requirement (cy)
EWRSP-1[2]	17.5	3	84,700
EWRSP-2A[2,3]	8.3	0	0
EWRSP-2B[2,3]	5.1	3	24,684
EWRSP-3	19.5	3	94,574
EWRSP-4[2]	22.6	3	109,481
WRSP-1	41.9	3	202,796
WRSP-2 and WRSP-3	171.8	3	831,512
TSF	564.4	3	2,731,696
Plant Area (excluding EWRSP-3)	78.9	0.5	63,646
Surface Impoundments[4]	36.2	0.5	25,168
Open Pit[5]	165.3	0	0
GMSP-1	29.3	0	0
GMSP-2	31.6	0	0
GMSP-3	14.1	0.5	11,374
Ancillary Facility Areas[6]	19.7	0.5	15,891
Total	**1,226.2**	**-**	**4,195,522**

Notes:

[1] - Regraded areas based on reclamation and closure designs presented in Attachment E1.

[2] - EWRSP-1, EWRSP-2B, and a portion of EWRSP-2A will be reclaimed during the pre-production phase of mine operations. The outslope of EWRSP-4 will also be reclaimed during the pre-production phase of mine operations. The top surface of EWRSP-4 will be reclaimed following cessation of mining.

[3] - The portion of the EWRSP-2A that lies within the footprint of proposed WRSP-1 and will be incorporated into this new stockpile. The portion of EWRSP-2A located outside of the OPSDA boundary will be relocated to the top of EWRSP-2B and the disturbed area will be ripped and seeded. EWRSP-2B includes 5.1 acres of waste rock stockpile that will get covered and 7.6 acres of disturbed area that will get ripped and seeded.

[4] - Impacted Stormwater Impoundment A and the Process Water Reservoir cover requirements are already covered within the Plant Area and are excluded in the cover volume calculation.

[5] - Open pit area (132.1 acres) and associated disturbed area around the pit perimeter (33.2 acres) that will get ripped and seeded.

[6] - Includes ancillary facilities and structures not already included in one of the specific facilities listed within this table. Includes haul and access roads, electrical power distribution system; storm water and sediment control structures; equipment storage areas; pipeline corridors; pump stations; tanks; explosives magazine and associated access road; and fencing.

3.2 Revegetation Plan

The revegetation plan for the Copper Flat Project is designed to create a stable, self-sustaining plant community and will conform to the planned grazing and wildlife habitat PMLU for areas outside the open pit. Revegetation of the site will consist mainly of the establishment of grass, forb and shrub species characteristic of the desert grassland community. Plant species were chosen based on their ability to provide satisfactory cover, on their nutritional value and ability to support livestock production and wildlife habitat. General planting techniques and proposed seed mixtures are provided below.

3.2.1 Planting Techniques

In general, revegetation operations will follow immediately after cover material placement, or after grading and ripping for disturbed areas that don't require additional cover, and will be timed to take advantage of summer moisture to encourage the establishment of warm season grasses. Thus, to the extent practicable, soil placement and reclamation seeding will occur prior to the monsoon season of July, August and September.

Revegetation will be performed in a manner consistent with industry standards to promote erosional stability and support the post-mining land use. The general order agronomic practices for revegetation seeding are ripping or scarification, disking, seeding (drill, broadcast or hydroseed), mulching and crimping or tackifying. These practices are discussed in more detail below.

After placement, the cover will be scarified (ripped 8 to 12 inches) to break up compaction and roughen the surface. The ripping operation will be implemented on the contour for sloping areas to reduce the potential for early-stage soil erosion during vegetation establishment. The roughened surface is a transient condition that provides micro-sites for seedling establishment and to reduce concentrated overland flow and erosion. Prior to seeding, the seed bed will be prepared by disking or harrowing to a depth of approximately 6 inches. If soil amendments are required, disking to prepare the seedbed will take place after applying the amendments. Ripping and other seedbed preparation procedures will be conducted when surface and subsurface soil moisture conditions are dry to avoid compaction.

Specific seeding methods to be utilized at the site are dependent on many factors including the topography, surface conditions, seed mixture and equipment availability. Specialized rangeland drills are available for seeding native seed mixes. They are equipped with an agitator and depth bands to mix seed and ensure proper seeding depths. Alternatively, seed may be broadcast and covered using a drag or hydro-seeding may be used on steep, small areas where larger equipment cannot easily operate. In most cases, seed will be planted using a rangeland drill or similar equipment. Wherever possible, seeding will be done along the contour. When drill seeding is not practical due to steep slopes or wet soil conditions, broadcast seeding will be employed. For broadcast seeding, the drill seeding rate will be doubled and areas will be raked with a chain- or tire-harrow to lightly cover the seed and achieve good soil-seed contact.

Following seeding, certified weed-free mulch will be uniformly spread at a rate of about 2 tons/acre. Mulch will contain a minimum of viable seeds associated with the source (i.e., barley or wheat). Long-stem mulch will be given preference over shorter materials. The mulch will be then be crimped with a straight-disc harrow or similar equipment to fix it in place. On steep slopes, tackifier emulsion may be used to secure the mulch rather than crimping.

Weed control will be implemented only if necessary. Methods of weed control will be determined upon recommendations from the BLM and/or MMD.

3.2.2 Seed Mixtures

Table E7 provides the proposed interim seed mix (primarily associated with the seeding of the growth media stockpiles) and final seed mixes for the Copper Flat Project for the grazing and wildlife PMLUs. The seed mixtures include native warm and cool season grasses, perennial shrubs and forbs. **Table E8** provides the primary functions and attributes of each proposed plant species. The species selected for the reclamation seed mixtures have been successfully used in mine reclamation and range improvement projects in many parts of New Mexico and are readily available from seed suppliers. The seed mix is selected to provide early establishment of ground cover, erosion control and productivity while providing diversity in growth forms.

The seed mixes are designed for application prior to the summer rains and the seeding will be completed in early- to mid-June. The ratio of cool season to warm season grasses may be adjusted if the seeding is conducted after the summer rains. The overall target seed rate for final seeding is expected to vary, but will range from about 40 to 60 seeds per square foot. Interim seedings for growth media stockpiles and other temporary stabilization seedings target a seed density of 30 seeds per square foot. All seed mixes shall be certified as weed free.

NMCC may propose to adjust the seeding rates or species listed in **Table E7** based on seed availability or to accommodate variations in seeding methods (e.g., broadcast, drill, hydraulic) and field conditions. A list of alternate or substitute species is included in **Table E9**. Based on the performance on the interim seed mix and seeding associated with the contemporaneous reclamation of the existing stockpiles, the final seed mix may be modified with approval of the MMD.

Table E7: Interim and Final Reclamation Seed Mixes

Scientific Name	Common Name	PLS/ac[1]	
		Interim	Final
Grasses – Warm Season			
Bothriochloa barbinodis	Cane bluestem	0.15	0.20
Bouteloua curtipendula	Sideoats grama	1.00	1.10
Bouteloua gracilis	Blue grama	0.20	0.25
Pleuraphis jamesii	Galleta	0.75	1.10
Leptochloa dubia	Green sprangletop	0.15	0.20
Seteria vulpiseta	Plains bristlegrass	0.20	0.30
Sporobolus cryptandrus	Sand dropseed	0.03	0.04
Grasses – Cool, Intermediate Season			
Achnatherum hymenoides	Indian ricegrass	0.60	1.30
Eragrostis intermedia	Plains lovegrass	0.05	0.04
Hesperostipa newmexicana	NM feathergrass	0.70	0.50
Shrubs			
Atriplex canescens	Four-wing saltbush	0.30	1.75
Ericamerica nauseosus	Rubber rabbitbrush	0.10	0.35
Fallugia paradoxa	Apache plume	--	0.10
Krascheninnikovia lanata	Winterfat	0.15	0.70
Forbs			
Dalea candida	White prairie clover	0.10	0.40
Linum lewisii	Blue flax	0.15	0.35
Ratibida colomnifera	Prairie coneflower	--	0.10
Sphaeralcea ambigua	Desert globemallow	0.10	0.40
	Total	**4.73**	**9.18**

Notes:
[1] - Rate is in pounds of pure live seed (PLS) per acre; Substitutions may change seeding rates.

Table E8: Functions and Attributes of the Primary Plant Species

Species	Character[1]	Attributes and Function
Cane beardgrass (*Bothriochloa barbinodis)*	N,P,W,G	Bunch grass providing ground cover and forage
Blue grama (*Bouteloua gracilis*)	N,P,W,G	Drought resistant sod grass providing ground cover and forage
Side-oats grama (*Bouteloua curtipendula*)	N,P,W,G	Drought tolerant bunchgrass providing ground cover and forage
Galleta (*Pleuraphis jamesii*)	N,P,W,G	Bunchgrass providing erosion control and early spring/late fall forage
Green sprangletop (*Leptochloa dubia*)	N,P,W,G	Erect bunchgrass; aggressive short-lived nurse plant with forage value
Plains lovegrass (*Eragrostis intermedia*)	N,P,I,G	Bunchgrass providing ground cover and early spring forage
Plains bristlegrass (*Setaria vulpiseta)*	N,P,W,G	Palatable bunchgrass with valuable seed for upland birds and small mammals
NM needlegrass (*Hesperostipa neomexicana*)	N,P,C,G	Persistent bunch grass providing ground cover and forage
Sand dropseed (*Sporobolus cryptandrus*)	N,P,W,G	Drought tolerant bunchgrass adapted to sandy sites
Indian ricegrass (*Achnatherum hymenoides*)	N,P,C,G	Tufted grass providing forage/seed to birds and small mammals
Apache plume (*Fallugia pardoxa*)	N,P,S	Mid-height shrub providing browse, cover and erosion control
Four-wing saltbush (*Atriplex canescens*)	N,P,S	Slightly evergreen shrub providing cover/forage for wildlife and livestock
Winterfat (*Krascheninnikovia lanata*)	N,P,HS	Low shrub providing nutritious winter browse
Rubber rabbitbush (*Ericamerica nauseosus*)	N,P,S	Mid-height shrub providing cover and erosion control
Desert globemallow (*Sphaeralcea ambigua*)	N,P,F	Persistent mid-height forb providing browse for deer and antelope
Prairie coneflower (*Ratibida colomnifera*)	N,P,F	Red and yellow flowered forb attracting pollinators
White prairie clover (*Dalea candida*)	N,P,F	Nitrogen-fixing forb with low water requirements providing forage and ground cover
Blue flax (*Linum lewisii*)	N,P,F	Persistent blue-flowered forb, nutritious seed for ground birds

Notes:
[1] - N = Native; P = Perennial; W = Warm season; C = Cool season; I = Intermediate season; G = Grass; S = Shrub; HS = Half shrub; F = Forb

Table E9: Alternative or Substitute Plant Species for Seed Mixtures

Scientific Name	Common Name
Grasses	
Andropogon saccharoides	Silver bluestem
Aristida purpurea	Purple three-awn
Bouteloua eriopoda	Black grama
Eragrositis curvula	Weeping lovegrass
Digitaria californica	Arizona cottontop
Hesperostipa comata	Needle and thread
Heterotheca contortus	Tanglehead
Panicum obtusum	Vine mesquite
Pleuraphis mutica	Tabosa
Sporobolus contractus	Spike dropseed
Shrubs	
Calliandra eriophylla	Fairyduster
Isocoma tenuisecta	Burroweed
Lycium pallidum	Wolfberry
Nolina microcarpa	Beargrass
Forbs	
Baileya multiradiata	Desert marigold
Coreopsis lanceolata	Lanceleaf tickseed
Machaeranthera tanacetifolia	Prairie aster
Penstemon parryii	Parry’s penstemon

4.0 RECLAMATION SCHEDULE AND SEQUENCE

Table E10 presents the anticipated reclamation schedule and sequence for the Copper Flat Mine based on best available information and mine planning forecasts. The proposed schedule summarizes NMCC's understanding of the near-term mine operation and longer-term mine plan projections. More specifically, the schedule is based on the following considerations:

- Practical phasing of the reclamation projects to account for the anticipated labor, equipment and other resources that will be necessary to complete these projects based on current conditions;
- Sequential closure of facilities in a phased cost efficient manner; and
- Total annual acreages that will be reclaimed over this period.

The anticipated duration for reclamation presented in **Table E10** include earthwork and reseeding, but do not include vegetation success/O&M/monitoring that will be conducted throughout the post-closure monitoring period as described in Section 5. The reclamation schedule is based on the number of years from the time NMCC obtains the required Mine permits and approvals to begin operations. Contemporaneous reclamation of EWRSP-1, EWRSP-2, and portions of EWRSP-4 will begin during the initial mine pre-production period.

Table E10. Copper Flat Reclamation Schedule and Sequence

Reclamation Facility Area	Reclamation Schedule, Year Following Mine Permit Approval[1]	
	Start	Finish
Existing Waste Rock Stockpiles		
EWRSP-1, EWRSP-2A, and EWRSP-2B (Placement of EWRSP-2A Stockpile Material Outside OPSDA onto the top of EWRSP-2B, Regrading and Cover Placement, Conveyance Channel Construction, Revegetation)	Year 2	Year 2
EWRSP-4 (Regrading, Cover Placement on Outslopes, Revegetation Outslopes, Revegetation of Top Surface,	Year 2	Year 2
EWRSP-4 (Cover Placement on Top Surface, Conveyance Channel Construction,	Year 14	Year 14
EWRSP-3 [2] (Regrading and Cover Placement, Conveyance Channel Construction, Revegetation)	Year 15	Year 16
Proposed Waste Rock Stockpiles		
WRSP-1 (Regrading and Cover Placement, Conveyance Channel Construction, Revegetation)	Year 13	Year 16
WRSP-2 (Regrading and Cover Placement, Conveyance Channel Construction, Revegetation)	Year 14	Year 16
WRSP-3 [3] (Regrading and Cover Placement, Conveyance Channel Construction, Revegetation)	Year 10	Year 16
Proposed Tailing Storage Facility		
Tailings Storage Facility (Regrading and Cover Placement, Conveyance Channel Construction, Revegetation)	Year 15	Year 21
Active Evaporation of Drain Down Waters	Year 12	Year 18
Construction of Evaporation Pond	Year 17	Year 18
Passive Evaporation of Drain Down Waters	Year 18	Year 38
Evaporation Pond Closure (Ripping Liner and Backfilling Pond, Regrading and Cover Placement, Revegetation)	Year 39	Year 39
Proposed Plant Area Facility[2]		
Plant Area (Building/Structure Demolition & Removal, Regrading and Cover Placement, Conveyance Channel Construction, Revegetation)	Year 15	Year 16

Table E10. Copper Flat Reclamation Schedule and Sequence (Continued)

Reclamation Facility Area	Reclamation Schedule, Year Following Mine Permit Approval(1)	
	Start	Finish
Proposed Open Pit		
Rapid Fill of Pit Lake	Year 13	Year 14
Pit Perimeter (Construction of Pit Perimeter Conveyance Channels Perimeter Berm/Fencing and Cover Placement, Construction of Haul Road Conveyance Channel, Revegetation)	Year 15	Year 15
Ancillary Facilities[4]		
Building/Structure/Pipeline Demolition, Removal, and Burial, Regrading and Cover Placement, Facility Revegetation	Year 16	Year 20

Notes:

[1] - The reclamation schedule is based on the number of years from the time NMCC obtains all of the required Mine permits and approvals to begin operations.

[2] – Reclamation of the plant area will also include reclamation of EWRSP-3 and the haul roads running through the plant area.

[3] – Reclamation of the WRSP-3 may begin contemporaneous with mining operations.

[4] - Includes ancillary facilities and structures not already included in one of the specific facilities listed within this table. Includes haul and access roads, electrical power distribution system; storm water and sediment control structures; equipment storage areas; pipeline corridors; pump stations; tanks; explosives magazine and associated access road; and fencing.

5.0 PERFORMANCE AND RECLAMATION STANDARDS AND REQUIREMENTS

5.1 Most Appropriate Technology and Best Management Practices

The reclamation and closure plan has been designed to protect human health and safety, the environment, wildlife and domestic animals using Most Appropriate Technology (MAT) and BMPs. MAT in mine operations is understood as the selection and application of the most suitable techniques, practices, or methods of operation that have been proven effective in achieving the intended purpose or performance standard while reducing impacts to the environment (prevent, reduce or control pollution). The selection of a MAT is typically accomplished in mine feasibility studies that evaluate mining technologies, processes and operating methods relative to site-specific conditions. The Copper Flat Project will be designed and operated using both MAT and BMPs based on site-specific technical and economic feasibility. Mining technologies, processes and operating methods proposed by NMCC are provided in Section 2.0 of Updated Mine Operations and Reclamation Plan.

BMPs are defined as any program, technology, process, siting criteria, operating method, measure or device, which controls, prevents, removes or reduces impacts to the environment. BMPs are currently accepted, effective and practical methods including structural or engineered control devices, systems and materials as well as operational or procedural practices used to prevent or reduce environmental impacts of ground disturbing activities.

NMCC will meet or exceed applicable state and federal reclamation requirements through application of MAT and BMPs. NMCC has designed its reclamation and closure plan to use the most appropriate technology for an open pit mine operation. Structural and operational BMPs will be used to stabilize the site, limit erosion, reduce sediment control fugitive dust, and prevent noxious weeds from existing and proposed facilities and disturbed areas during reclamation. These BMPs include:

- Surface stabilization measures – dust control, regrading, mulching, riprap, temporary and permanent revegetation/reclamation and placing growth media;
- Run-on and runoff control and conveyance measures – clean water diversions and swales, armored drainage channels, runoff diversions and berms;
- Sediment traps and barriers – check dams, grade stabilization structures, sediment detention, sediment/silt fence and straw bale barriers and sediment traps;
- Air quality – apply water to control dust on haul roads and other disturbance areas, interim seeding of growth media stockpiles and other surface disturbance areas
- Revegetation and noxious weeds – use of certified weed-free seed and mulch, cleaning heavy equipment before entering the mine area, noxious weed monitoring and treatment.

BMPs will be employed in appropriate sites during the reclamation phase of the Project and structures will be inspected periodically, with repairs performed as needed. NMCC will limit disturbance and preserve existing vegetation to the maximum extent possible. Additional details regarding structural and operational BMPs are included in Section 4.0 of the Updated Mine Operations and Reclamation Plan.

5.2 Contemporaneous Reclamation

Contemporaneous reclamation, mining-for-closure, or “designing for closure” will reduce erosion, provide early impact mitigation, limit costs and reduce final reclamation work. NMCC is committed to maximize this type of reclamation at the Copper Flat Mine Project and has designed mine facilities to employ contemporaneous reclamation, to the extent appropriate and practicable. Specific details regarding contemporaneous reclamation of the EWRSP-1, -2B and -4 and some outslopes of the proposed WRSP-3 are provided in Section 2.1 and 2.2 respectively. Other examples include, designing the waste rock stockpiles in such a way to facilitate their reclamation, building final lifts to accommodate the required reclamation slopes, and managing tails deposition while constructing the embankment to achieve the desired outslope grade.

5.3 Protection Assurance

NMCC has designed a reclamation plan to assure protection of human health and safety, the environment, wildlife and domestic animals. Mine development and operation activities will also be implemented to assure protection of human health and safety, the environment, wildlife and domestic animals. Specific details of the protection assurances associated with signs, markers, and safeguarding [603.C (1)]; wildlife protection [603.C (2)]; cultural resources [603.C (3)]; hydrologic balance [603.C (4)]; stream diversions [603.C (5)]; impoundments [603.C (6)]; mass movement minimization [603.C (7)]; riparian and wetland areas [603.C (8)]; roads [603.C (9)]; subsidence control [603.C (10)]; and explosives [603.C (11)] are provided in Section 4.3 of NMCC’s Updated Mine Operations and Reclamation Plan.

5.4 Site Stabilization and Configuration

The permit area will be stabilized, to the extent practicable, to prevent future impact to the environment and protect air and water resources. The final surface configurations for the Project are presented in **Figure E4** and will be suitable to achieve the grazing, wildlife habitat, and mining PMLUs. All facilities, slopes, embankments and roads will be designed, constructed, maintained and reclaimed to achieve stable configurations within the industry’s and engineering “standard of care” design process. Specific details on the steps to be taken to stabilize and configure to minimize future impact to the environment and protect air and water resources are provided in Section 4.4 of NMCC’s Updated Mine Operations and Reclamation Plan.

5.5 Topdressing and Cover Materials

Topdressing, for the purposes of reclamation, refers to any suitable soil or geological material used as growth media or soil cover for establishing native vegetation on sites disturbed by mining activities. Reclamation suitability is based on the material’s ability to provide erosion control, sustain vegetation, and reduce net infiltration into the underlying materials.

As previously described, growth media as referred to within this Mine Reclamation and Closure Plan is equivalent to topdressing as defined in 19.10.1.7.T(1) NMAC. Growth media removal quantities have been estimated on the basis of the Supplemental Soils Investigation (Golder, 2013) and are discussed below. The majority of the cover materials required to support revegetation and reclamation efforts will be obtained from within the footprints of the proposed TSF, WRSP-2 and WRSP-3.

The proposed soil cover system for the Copper Flat Project is a monolithic store-and-release or evapotranspiration (ET) cover. A store-and-release cover system stores precipitation during wet periods and releases the moisture back to the atmosphere via evapotranspiration during dry periods, reducing net infiltration. Where mine wastes are present, soil covers will be 36 inches thick unless NMCC can demonstrate a thinner cover can be protective of groundwater (per NMAC 20.6.7.33.F), resist erosion and support vegetation. Other reclamation units including the plant site, roads, other ancillary facilities, and disturbed areas that do not contain adequate growth media will require a minimum of 6 inches of cover. GMSP-1 and 2 which are underlain by unconsolidated alluvial materials will not require additional cover. Additional information regarding cover material requirements for reclamation are provided in Section 3.1.

5.5.1 Suitability

The suitability of topdressing/cover materials is based on the material's ability to provide erosion control, sustain vegetation, and reduce net infiltration. The ability of the materials to meet these performance objectives is primarily related to their physical properties, specifically the texture and rock fragment content of the final cover system (Golder, 2013). Cover materials identified within the limits of the TSF and WRSP-2 and -3 were found to be generally suitable from a physical perspective, though many surficial soils are fine-textured (high clay and silt content) that could be present challenges with respect to revegetation and soil erodibility. In general, soils and underlying colluvial and alluvial materials in the permit area are considered suitable and have no chemical limitations (salinity, pH, macro and micronutrients, lime, or specific ion toxicity) for growth of native and adapted reclamation species.

Pursuant to Paragraph (2) of Subsection F of 20.6.7.33 NMAC, the proposed soil cover system must be designed to limit net-percolation by having the capacity to store at least 95 percent of the long-term average winter (December, January and February) precipitation or at least 35% of the long-term average summer (June, July and August) precipitation, whichever is greater as determined by utilizing field or laboratory test results or published estimates of available water capacity. Long-term average annual summer precipitation totals for the Hillsboro area are 5.43 inches (35% equals 1.90 inches), and winter precipitation totals 1.96 inches (95% equals 1.86 inches) (WRCC, 2016). Therefore in order to comply with the Copper Rule, the proposed 3-foot thick soil cover system must be able to store at least 1.90 inches of water.

The available water capacity (AWC) for the salvageable growth media within the limits of the TSF and WRSP-2 and -3 were estimated as part of the Supplemental Soils Investigation at Copper Flat (see Subsection 3.3.1 and Table 3, Golder, 2013). The AWC estimates were based on general relationships

between water retention and soil texture (Brady and Weil 2002, USDA NRCS 2005). These estimates show an average AWC of approximately 0.9 inches of water per 1 foot of soil for the salvageable growth media within the footprint of WRSP-2 and -3, with a range of between 0.6 and 1.3 inches of water per 1 foot of soil. The AWC estimates for the salvageable growth media within the footprint of the TSF show an average AWC of approximately 1.2 inches of water per 1 foot of soil, with a range of between 0.4 and 2.2 inches of water per 1 foot of soil.

The actual water retention of the salvaged soils will vary based on the types of soil materials that are placed in the growth media stockpiles. Cover materials with varying physical properties (e.g. texture and rock fragment content) will be blended during soil salvage. Given the range of materials identified as suitable cover, the proposed cover system at Copper Flat is expected to meet the storage requirements of the Copper Rule.

Additional sources of alternative sources and types of materials for use as reclamation cover may be identified as part of a growth media management plan to be developed as part of the CQA/CQC plan that will be submitted to the agencies within 180 days of submission of a notice of intent to implement the reclamation plan and in consideration of performance objectives for the soil cover system.

5.5.2 Salvage

Where salvageable soil and alluvial materials exists, either on undisturbed or reclaimed areas, NMCC will salvage as much material as can be safely and practicably recovered. Additional suitable soils and other suitable cover materials including unconsolidated subgrade materials, colluvium and overburden will be salvaged to meet the volumetric requirements for final cover construction at closure (Section 3.1). Suitable soil materials available for reclamation from the previously mined and disturbed areas are very limited. Efforts will be made to carefully recover and stockpile these materials during the pre-production phase of the Project.

As part of the proposed operations, NMCC will salvage suitable soils and near-surface alluvial materials from within the TSF, WRSP-2 and WRSP-3 footprints. These materials are part of the Santa Fe formation gravels and alluvial basin fill. NMCC will bulk salvage suitable topdressing materials. The deep coarse-textured alluvial materials will be mixed with the more fine-textured surficial soils as part of the bulk salvaging, loading and hauling operations and will create a suitable growth media for final reclamation (Golder, 2013).

Large diameter trees and shrubs will be grubbed prior to soil salvage. To the extent that it doesn't interfere with soil salvage operations, small diameter woody plants and herbaceous vegetation will be salvaged and incorporated in with the stockpiled growth media to maintain organic matter content of the cover materials. However, vegetation residues from creosote-dominated vegetation will not be salvaged and incorporated

in the growth media stockpiles due to creosote's allelopathic properties that may prevent seedling germination during revegetation.

The estimated volumes of salvageable cover material available are shown in **Table E11**. These estimates are based on the test pit data collected during the Supplemental Soils Investigation by Golder (2013). The area with existing tailing deposits (about 60 acres) will not get salvaged and that approximately 87% of the materials with in the remaining TSF footprint area contains suitable growth media (Golder 2013). Assuming a 20-foot excavation, there is approximately 13,755,280 cy of suitable cover materials within the proposed TSF footprint.

The WRSP-2 and WRSP-3 footprint occurs on the back- and footslopes of Animas Peak and the soils and unconsolidated materials are shallower than those found within the TSF footprint. Test pit excavations in these locations encountered andesite bedrock and were restricted to 10 feet. Additionally, soils on the steep slopes of Animas Peak are expected to be thin and salvage may not be practical. Thus, cover estimates assume that only 50% of the proposed WRSP-2 and WRSP-3 disturbance footprints will be salvageable. Assuming a 10 foot excavation depth, there is approximately 1,385,853 cy of suitable cover materials available within the footprints of WRSP-2 and WRSP-3.

Surficial soil materials will salvaged in association with the construction of the plant, pipeline corridor, access roads and ancillary facilities. The salvaged growth media in these locations will be windrowed for local redistribution during final reclamation of the site.

Total available topdressing materials for the project are estimated at over 15 million cy (**Table E11**). These estimates surpass the required 4.2 million cy of cover required for the Copper Flat Reclamation and Closure Plan (**Table E6**). To obtain the necessary cover volume, a single 134-acre excavation to 20 feet will salvage sufficient materials. Additional sources of alternative sources of growth media for reclamation may be identified prior to construction activities and in consideration of performance objectives for the soil cover system.

Table E11: Estimated Available Topdressing Materials

Facility	Growth Media Salvage Area (acres)	Estimated Available Topdressing Materials (cy)
Tailings Storage Facility Area[1]	490	13,755,280
WRSP-2 and WRSP-3 Areas[2]	86	1,385,853
Total	**576**	**15,141,133**

Note:
[1] - Surface area excludes 60 acres of existing tailing deposits and assumes that 87% of the salvage area has suitable material.
[2] - Surface area excludes steep slopes and existing waste rock pile, it is assumed that 50% of the WRSP footprint areas will be salvageable.

Oversight and coordination will be required to handle suitable growth media during salvage operations. Specific borrow areas will be developed within the TSF and WRSP footprints for growth media and engineering materials. Depending on the construction sequence, both engineering and growth media materials may come from a single borrow area. The procedures to segregate topdressing from engineering materials will be further defined in a materials handling plan once final engineering specifications are determined.

5.5.3 Stockpiling

Salvaged growth media will be stored in the three GMSPs shown in **Figure E4**. The design capacity of GMSPs is estimated at 4.5 million cy (Section 2.7). Approximately 4.2 million cy of growth media are required for reclamation (**Table E6**). This includes nearly 204,000 cy of topdressing required to reclaim the EWRSPs during the pre-production phase (Section 2.1) and 80,000 cy of topdressing to be stored in wind-rows around the perimeter of surface disturbances for the plant area and ancillary facilities (Section 3.1). For final reclamation of the TSF and WRSPs, it is estimated that the GMSPs need to contain a total of 3.92 million cy. Thus, the GMSPs at their design capacity will contain an additional 584,000 cy of growth media to offset any losses associated with the storage and redistribution of growth media.

GMSPs are located so as not to be disturbed or impacted by mining operations. The surfaces of the stockpile will be shaped after construction with overall slopes of 3H:1V or shallower to minimize soil loss. To further minimize erosion and the establishment of undesirable weeds, growth media stockpiles will be seeded with the interim seed mix listed in **Table E7**. Interim seeding will be conducted prior to growing season. Diversion ditches will be constructed upgradient of the stockpiles, where necessary, to prevent run-on erosion. Additionally, berms will be constructed around the crest of stockpiles, as needed, to prevent outslope erosion from overland flow. BMPs such as silt fences or staked straw bales will be used as necessary to capture sediment and reduce soil loss.

5.5.4 Re-Distribution

Details regarding growth media's redistribution and application on regraded areas ready for reclamation are discussed in the Reclamation Plan (Section 3).

5.5.5 Stabilization

Cover materials will be stabilized after redistribution with seedbed preparation including scarification and disking along the contour and by seeding and mulching operations as described in the Reclamation Plan (Section 3).

5.5.6 Soil Fertility

Native soils in the project area, like most semi-arid soils in the region, have inherently low fertility in the upper horizons. In particular, site soils have relatively thin and poorly developed A horizons with low nitrogen and phosphorus levels and low to moderate organic matter content (Section 6, BDR; Golder,

2013). Further, most semi-arid native plants have adapted to low to moderate soil fertility conditions and are relatively unresponsive to increased soil fertility compared to crop plants (Chapin 1980). Fertilizer additions have been shown to also have negative impacts in reclamation including increases in weedy annuals, shifts in species composition and decreases in drought, disease and pest resistance. Based on the performance of interim seeding and concurrent reclamation efforts, NMCC will evaluate potential soil amendment requirements for redistributed topdressing materials through soil testing relative to native plant nutrient requirements.

5.6 Erosion Control

Reclamation activities described in Section 2.0 will stabilize disturbed areas to a condition that protects against erosion. All disturbed areas will be regraded and shaped to a final contour that achieves positive drainage, reconstructs slopes with lengths and gradients that will provide long-term stability and seeded and mulched to establish a vegetative cover. Stormwater will be diverted away from facilities. Drainage channels will be designed to regulate the velocity of water and minimize the potential for channel erosion. BMPs for stormwater diversions, drainage and other water conveyance channels may include lining the channel with rock, riprap, vegetation or other geotechnical materials.

NMCC will routinely inspect and maintain all reclaimed areas, drainage channels, diversion structures, retention impoundments and auxiliary erosion control features in accordance with professionally recognized standards such as Natural Resources Conservation Service. Post-construction/reclamation inspection schedules will be developed to include provisions for periodic (annual or semi-annual) and extreme event monitoring as appropriate for individual facilities.

5.7 Revegetation Success

The MMD rules require reclamation to a self-sustaining ecosystem (SSE) appropriate for the life zone of the surrounding area following closure. Revegetation success will be determined in conformance with Section 19.10.603.G of the Mining Act rules.

To summarize the revegetation success standards specified in Section 603.G, to obtain the release of financial assurance, revegetated lands under the grazing and wildlife habitat PMLU will meet the following:

- Total herbaceous cover and productivity shall be equal to 90 percent of the reference area within a 90 percent statistical confidence.
- The diversity of plant life forms (woody plants, grasses and forbs) shall determine what is reasonable given the physical environment of the reclamation.
- Woody plant species shall be established to an approved density with an 80 percent statistical confidence, or
- Other reasonable, attainable standards approved by the Director.

To establish revegetation success standards, NMCC will work with the MMD and BLM to develop the appropriate, reasonable, and attainable success standards for the site. They may include use of a reference area to develop technical standards from the analysis of vegetation data collected in native plant communities, the performance of areas reclaimed in the pre-production phase, interpretation of the ecological site potential and the anticipated differences in community structure among the reference area and reclaimed lands, or other reasonable means. The revegetation success standards agreed to will not be applied to the open pit area.

At the time of monitoring for financial assurance release, vegetation in reclaimed areas will likely represent an early-seral stage, grass-shrub community whereas the reference area will be representative of a mature plant community. The selection of the reference area and establishment of any technical achievable revegetation success standards for reclaimed areas will be developed in coordination with the MMD and/or the BLM.

Vegetation sampling techniques and statistical protocols for data analysis and hypothesis testing will also be developed in consultation with the agencies. The limitations associated with sampling and statistical analyses of vegetation data from heterogeneous semi-arid plant communities (i.e., minor components are often not represented in monitoring data) will be considered in selecting these appropriate sampling and analysis protocols. Standard plant ecology field methods and agency technical guidance will be used to create a robust and defensible vegetation monitoring program.

Revegetation success will be determined by monitoring the vegetation parameters in the final two years of the financial assurance period (years 11 and 12 following final reclamation). Data collection will be performed using the same methods and techniques on both reference and reclaimed areas. Vegetation success monitoring will be conducted once per year in the early fall after the tenth growing season. Two years of achieving the revegetation criteria will be considered a demonstration of success of the revegetation program.

5.8 Perpetual Care

The Reclamation and Closure Plan for the Copper Flat facility is designed to meet, without perpetual care, all applicable environmental requirements for post-mining, reclaimed sites and support a SSE. Details regarding perpetual care are provided in Section 4.8 of the Updated Mine Operations and Reclamation Plan.

6.0 REFERENCES

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FIGURES

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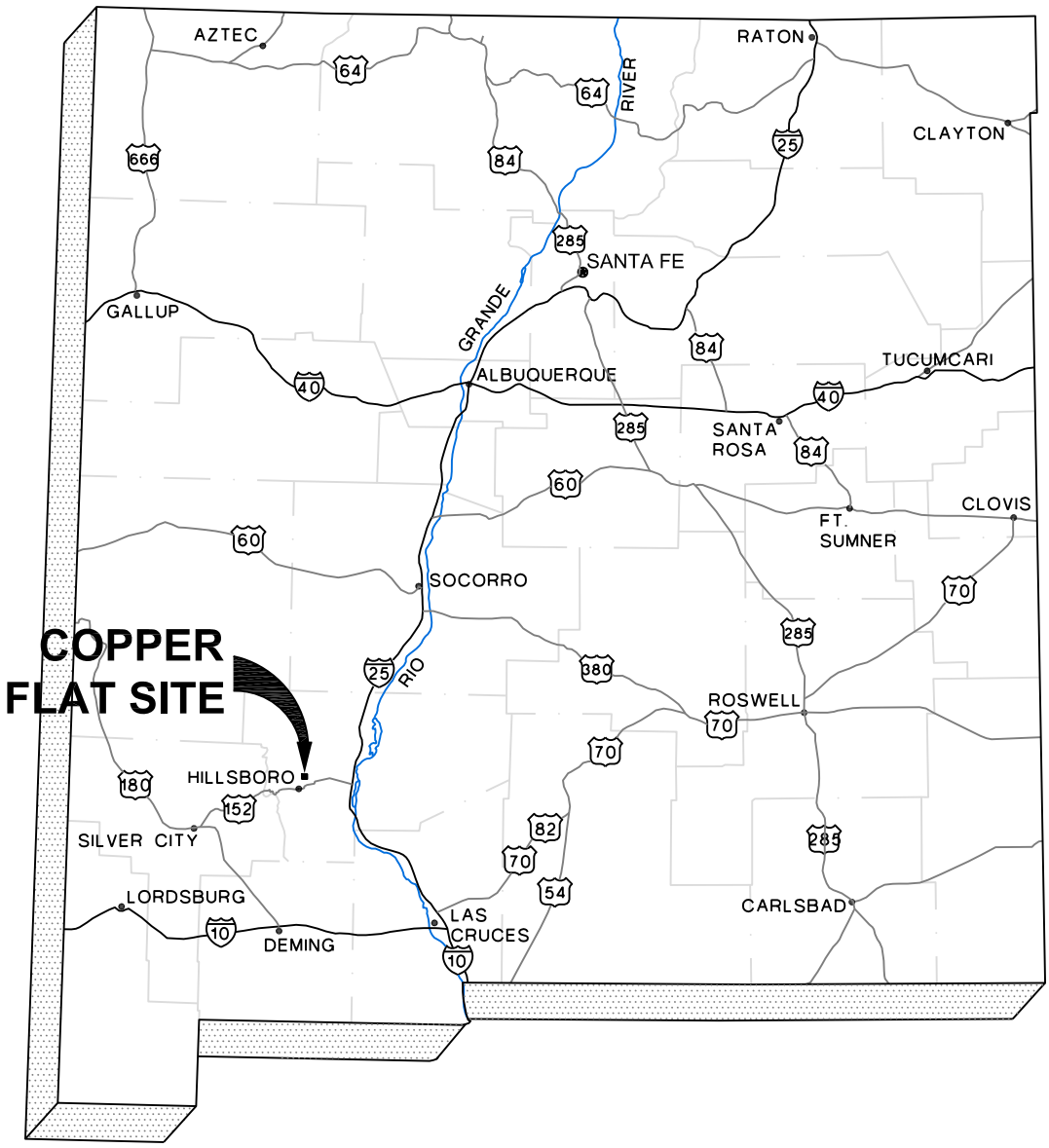

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DESIGN	TS
REVIEW	TS
APPROVED	TS

PROJECT

COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE

SITE LOCATION MAP

PROJECT No.	PHASE	Rev.	FIGURE
1531453	0300	0	E1

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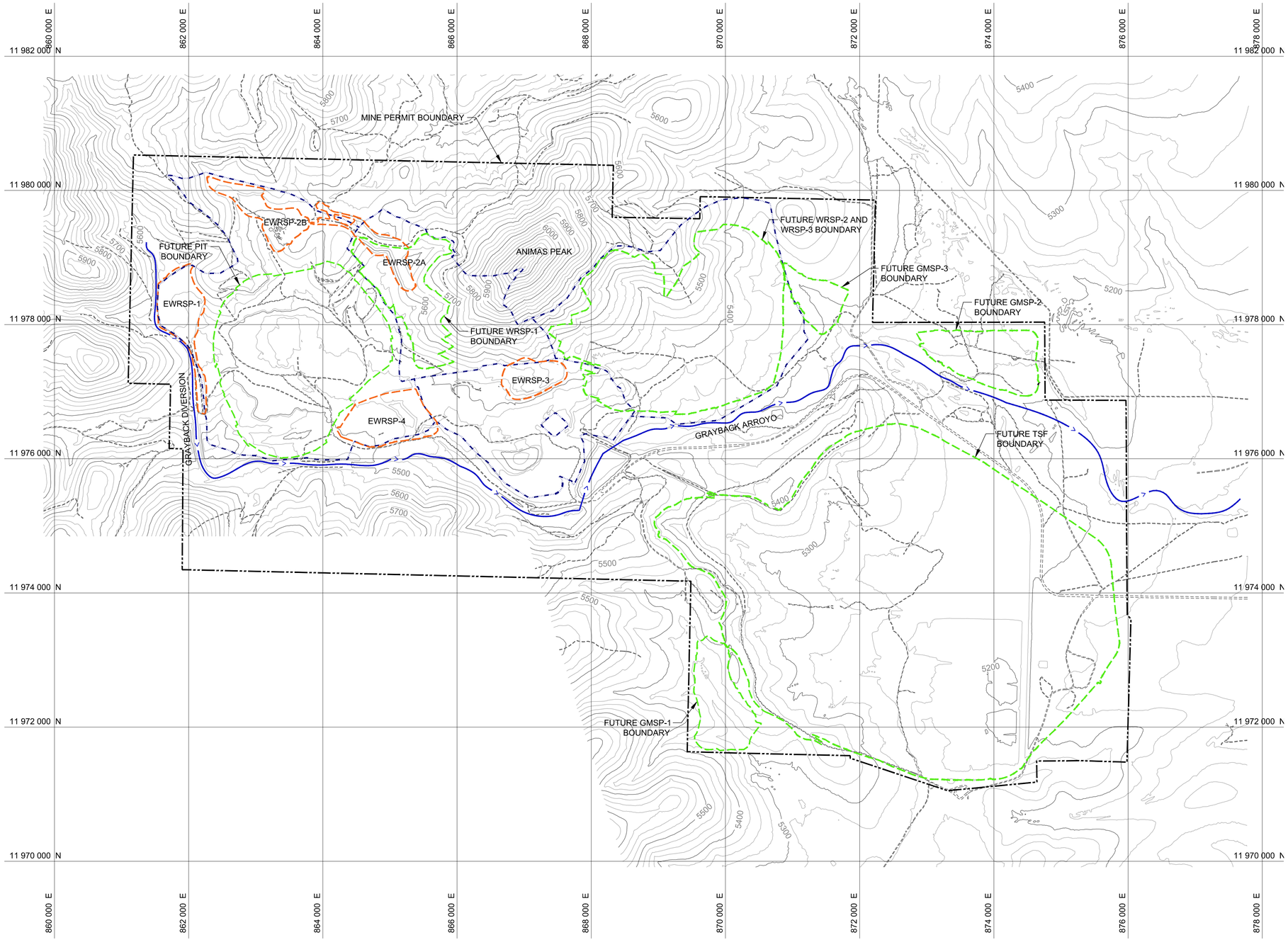

GENERAL LEGEND

- 5400 — EXISTING GROUND CONTOURS (ft-MSL)
- MINE PERMIT BOUNDARY
- EXISTING FACILITY BOUNDARY (APPROXIMATE)
- PROPOSED FACILITY BOUNDARY
- WATERSHED BOUNDARY (BY OTHERS)
- EXISTING DIVERSION OR ARROYO
- EXISTING ROAD

WRSP	WASTE ROCK STOCKPILE
EWRSP	EXISTING WASTE ROCK STOCKPILE
TSF	TAILING STORAGE FACILITY
GMSP	GROWTH MEDIA STOCKPILE

NOTES

1. EXISTING GROUND TOPOGRAPHY WAS DEVELOPED BY COOPER AERIAL SUVEYS BASED ON A JUNE 18, 2011 AERIAL SURVEY AND WAS PROVIDED BY THEMAC RESOURCES.
2. FINAL BUILDOUT TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NEW MEXICO COPPER CORPORATION (NMCC).
3. FINAL BUILDOUT TOPOGRAPHY FOR THE TSF WAS DEVELOPED BY GOLDER AND IS FROM THE 30K TPD TAILINGS STORAGE FACILITY FEASIBILITY DESIGN REPORT (GOLDER, 2015).

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1" = 800' FEET

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A	2016-10-07	PRELIMINARY FOR AGENCY REVIEW	HNL	HNL	TS	TS

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PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
GENERAL ARRANGEMENT
EXISTING SITE CONDITIONS

PROJECT NO.	CONTROL	REV.		FIGURE
1531453	0500	A	1 of 1	E2

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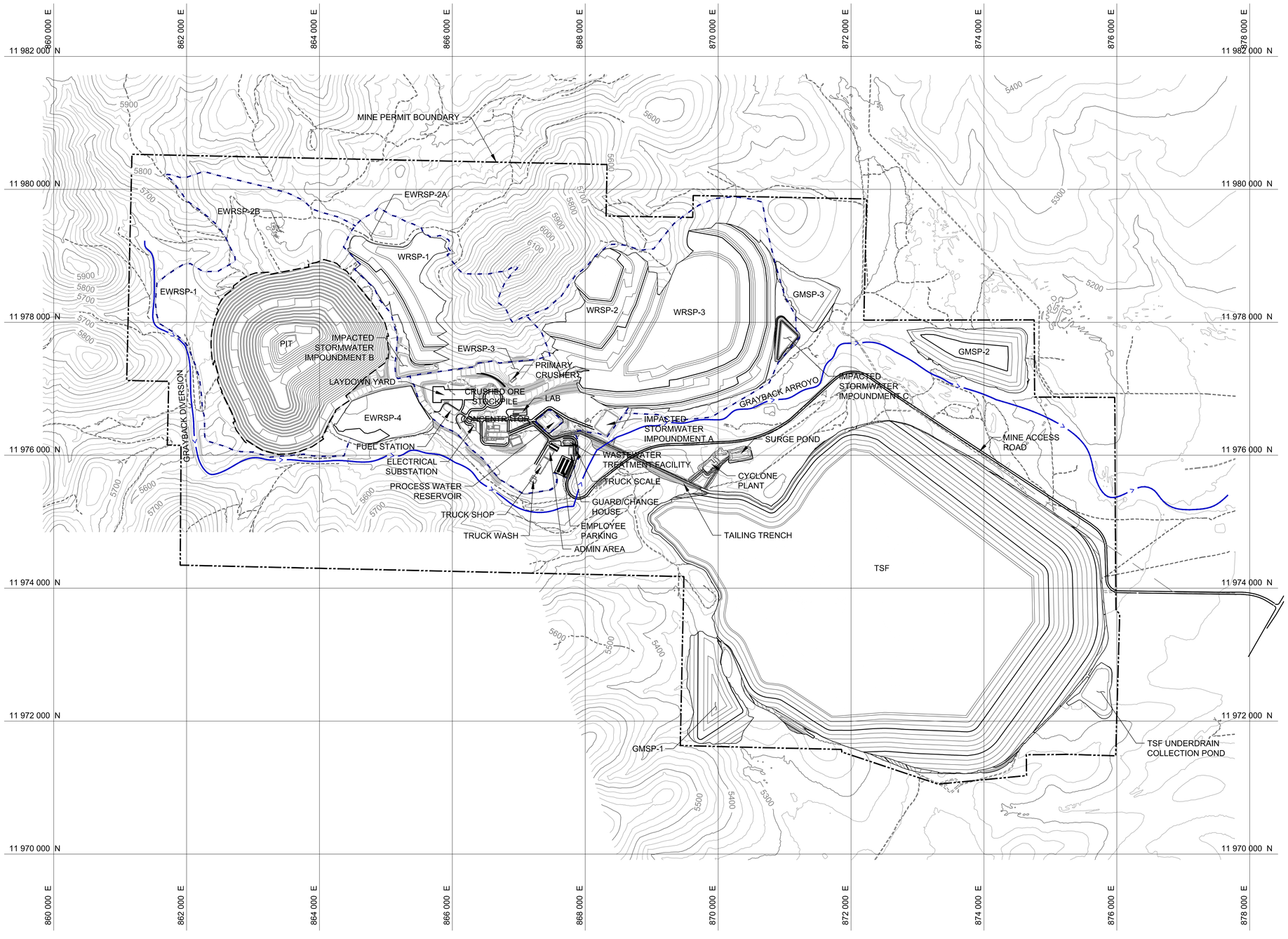

GENERAL LEGEND

5400	EXISTING GROUND CONTOURS (ft-MSL)
5400	PROPOSED DESIGN CONTOURS (ft-MSL)
	MINE PERMIT BOUNDARY
	WATERSHED BOUNDARY (BY OTHERS)
	EXISTING DIVERSION OR ARROYO
	EXISTING ROAD
WRSP	WASTE ROCK STOCKPILE
EWRSP	EXISTING WASTE ROCK STOCKPILE
TSF	TAILING STORAGE FACILITY
GMSP	GROWTH MEDIA STOCKPILE

NOTES

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2. FINAL BUILDOUT TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NEW MEXICO COPPER CORPORATION (NMCC).
3. FINAL BUILDOUT TOPOGRAPHY FOR THE TSF WAS DEVELOPED BY GOLDER AND IS FROM THE 30K TPD TAILINGS STORAGE FACILITY FEASIBILITY DESIGN REPORT (GOLDER, 2015).

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1" = 800' FEET

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PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
GENERAL ARRANGEMENT AT FINAL BUILDOUT

PROJECT NO.	CONTROL	REV.		FIGURE
1531453	0500	A	1 of 1	E3

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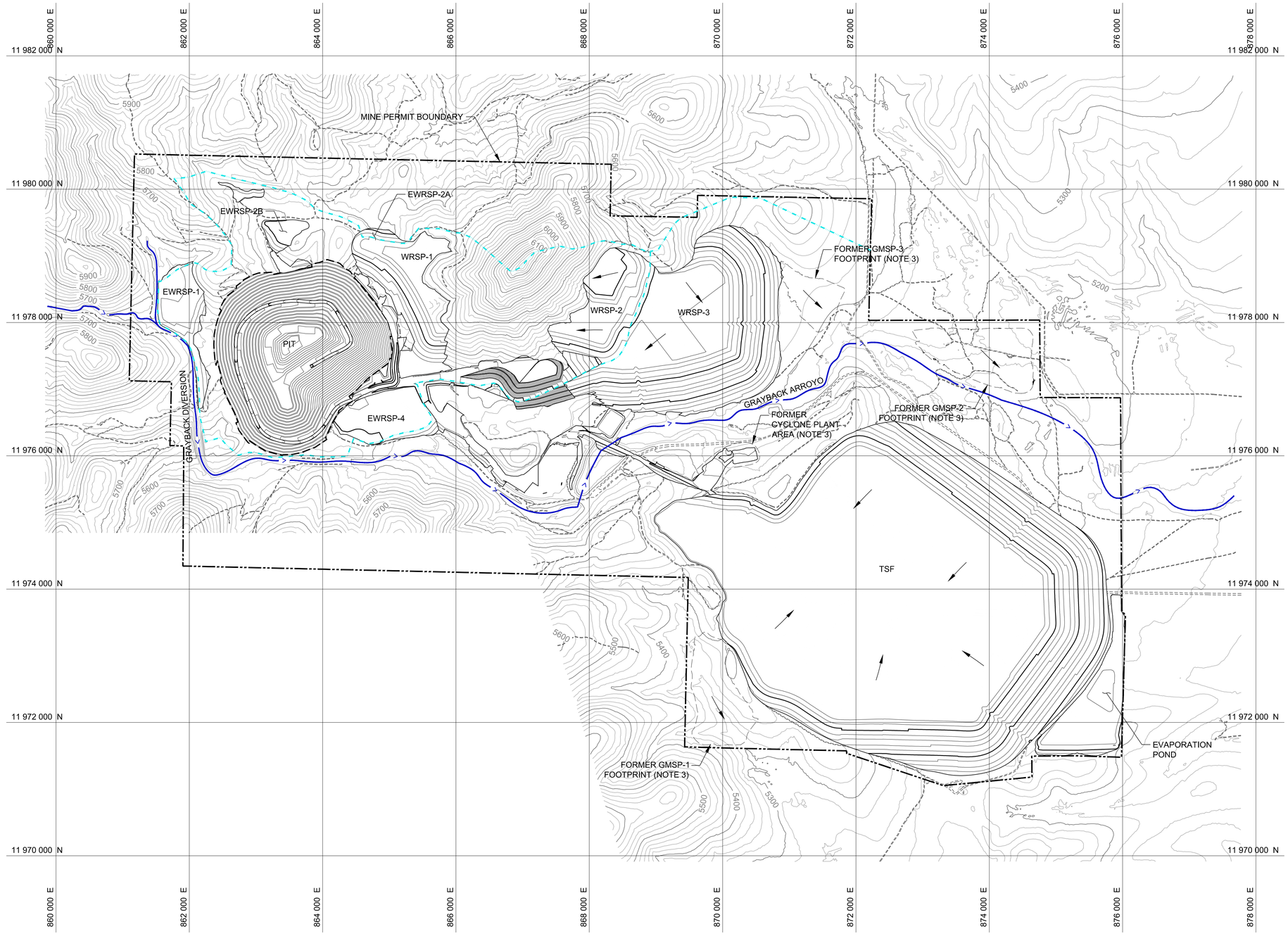

GENERAL LEGEND

- 5400 — EXISTING GROUND CONTOURS (ft-MSL)
- 5400 — PROPOSED DESIGN CONTOURS (ft-MSL)
- MINE PERMIT BOUNDARY
- RECLAMATION WATERSHED BOUNDARY
- EXISTING DIVERSION OR ARROYO
- EXISTING ROAD
- GRADE INDICATOR
- WRSP — WASTE ROCK STOCKPILE
- EWRSP — EXISTING WASTE ROCK STOCKPILE
- TSF — TAILING STORAGE FACILITY
- GMSP — GROWTH MEDIA STOCKPILE

NOTES

1. EXISTING GROUND TOPOGRAPHY WAS DEVELOPED BY COOPER AERIAL SURVEYS BASED ON JUNE 18, 2011 AERIAL SURVEY AND PROVIDED BY THEMAC RESOURCES.
2. PROPOSED DESIGN CONTOURS REPRESENT THE RECLAMATION SUBGRADE, PRE-COVER PLACEMENT TOPOGRAPHY.
3. FOOTPRINT OF FORMER GROWTH MEDIA STOCKPILES AND THE CYCLONE PLANT AREA WILL BE GRADED TO APPROXIMATE SURROUNDING TOPOGRAPHY, RIPPED AND REVEGETATED.

ISSUED FOR AGENCY REVIEW

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REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
GENERAL ARRANGEMENT
FINAL RECLAMATION TOPOGRAPHY

PROJECT NO.	CONTROL	REV.		FIGURE
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ATTACHMENT E1
MINE RECLAMATION AND CLOSURE DESIGN PLAN DESIGNS

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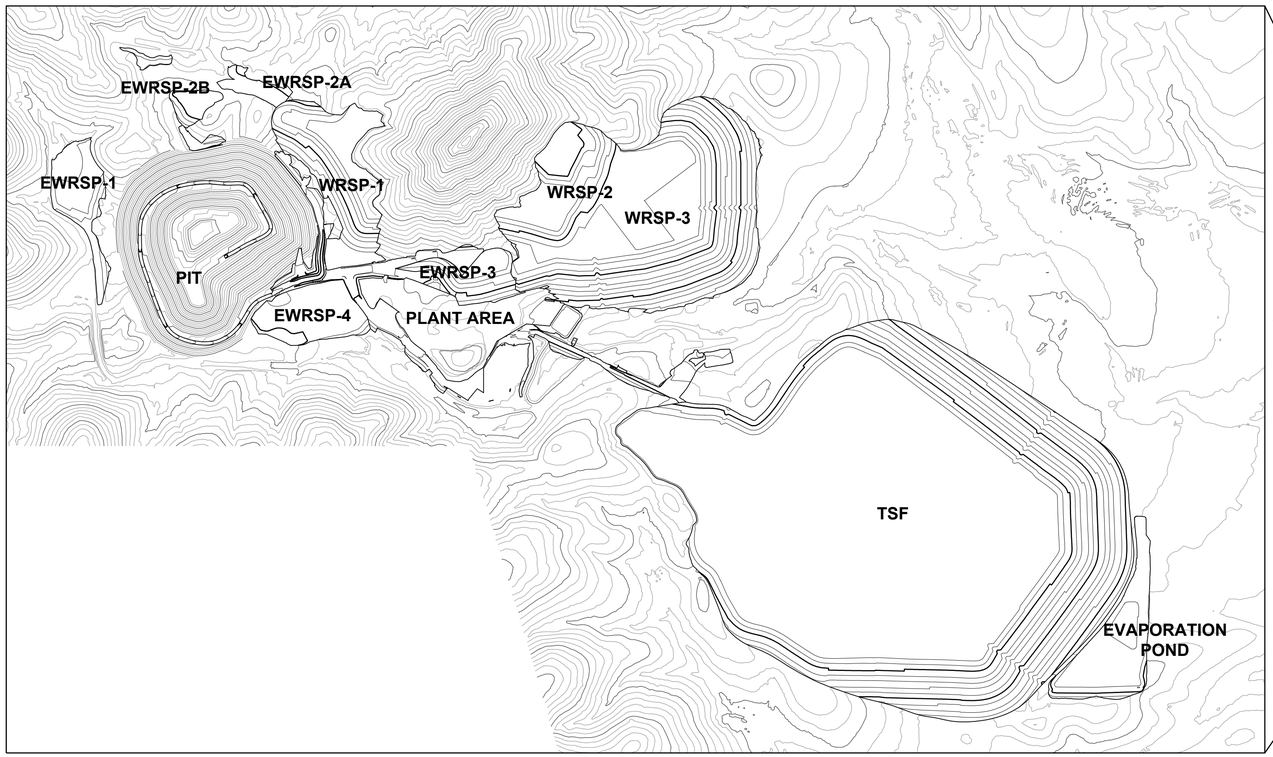
MINE RECLAMATION AND CLOSURE PLAN
SIERRA COUNTY, NEW MEXICO
OCTOBER 2016



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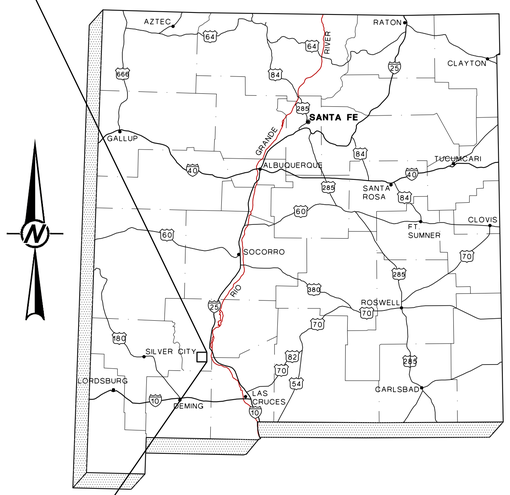

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LIST OF DRAWINGS

DRAWING NUMBER	DRAWING TITLE
G-001	TITLE SHEET
G-002	GENERAL ARRANGEMENT EXISTING SITE CONDITIONS
G-003	GENERAL ARRANGEMENT AT FINAL BUILDOUT
G-004	GENERAL ARRANGEMENT FINAL RECLAMATION TOPOGRAPHY
C-001	EWRSP-1 EXISTING FACILITY LAYOUT
C-002	EWRSP-1 REGRADE AND DRAINAGE PLAN
C-003	EWRSP-2B EXISTING FACILITY LAYOUT
C-004	EWRSP-2B REGRADE AND DRAINAGE PLAN
C-005	EWRSP-4 EXISTING FACILITY LAYOUT
C-006	EWRSP-4 REGRADE AND DRAINAGE PLAN
C-007	WRSP-1 AT FINAL BUILDOUT
C-008	WRSP-1 REGRADE AND DRAINAGE PLAN
C-009	WRSP-2 AND WRSP-3 AT FINAL BUILDOUT
C-010	WRSP-2 AND WRSP-3 REGRADE AND DRAINAGE PLAN
C-011	TSF AT FINAL BUILDOUT
C-012	TSF RECLAMATION AND DRAINAGE PLAN
C-013	PIT AT FINAL BUILDOUT
C-014	PIT RECLAMATION AND DRAINAGE PLAN
C-015	PLANT AREA AT FINAL BUILDOUT
C-016	PLANT AREA RECLAMATION AND DRAINAGE PLAN
C-017	EWRSP RECLAMATION SECTIONS
C-018	WRSP RECLAMATION SECTIONS
C-019	TSF, PIT AND PLANT RECLAMATION SECTIONS
C-020	TYPICAL SECTIONS AND DETAILS (1 OF 2)
C-021	TYPICAL SECTIONS AND DETAILS (2 OF 2)

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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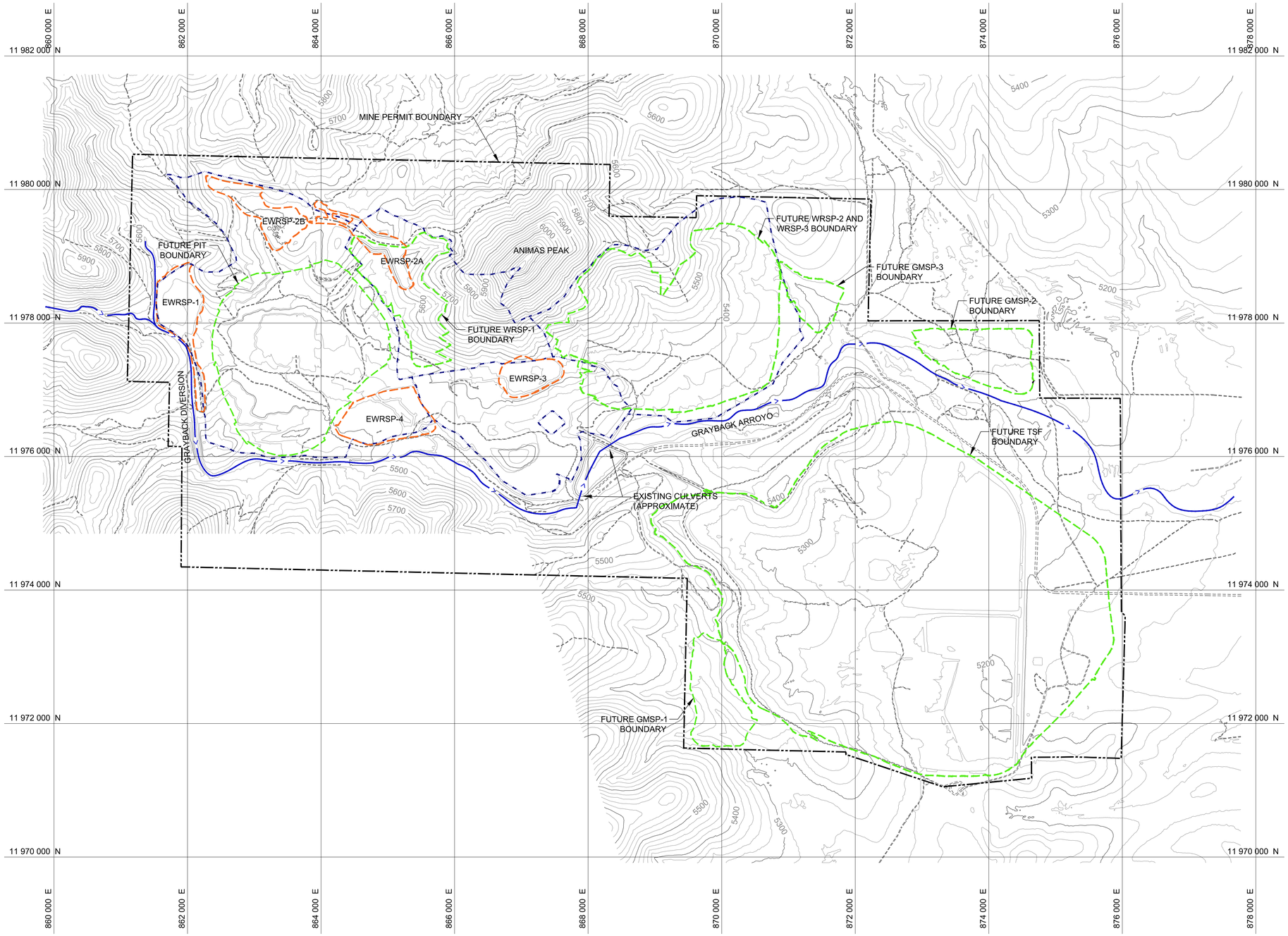
TITLE
TITLE SHEET

PROJECT NO.	CONTROL	REV.		DRAWING
1531453	0300	C	1 of 25	G-001



GENERAL LEGEND

- 5400 — EXISTING GROUND CONTOURS - 20 ft CONTOUR INTERVAL (ft-MSL)
- MINE PERMIT BOUNDARY
- EXISTING FACILITY BOUNDARY (APPROXIMATE)
- PROPOSED FACILITY BOUNDARY
- WATERSHED BOUNDARY (BY OTHERS)
- EXISTING DIVERSION OR ARROYO
- EXISTING ROAD

WRSP	WASTE ROCK STOCKPILE
EWRSP	EXISTING WASTE ROCK STOCKPILE
TSF	TAILING STORAGE FACILITY
GMSP	GROWTH MEDIA STOCKPILE

NOTES

1. EXISTING GROUND TOPOGRAPHY WAS DEVELOPED BY COOPER AERIAL SUVEYS BASED ON A JUNE 18, 2011 AERIAL SURVEY AND WAS PROVIDED BY THEMAC RESOURCES.
2. FINAL BUILDOUT TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NEW MEXICO COPPER CORPORATION (NMCC).
3. FINAL BUILDOUT TOPOGRAPHY FOR THE TSF WAS DEVELOPED BY GOLDER AND IS FROM THE 30K TPD TAILINGS STORAGE FACILITY FEASIBILITY DESIGN REPORT (GOLDER, 2015).

0 800 1600
FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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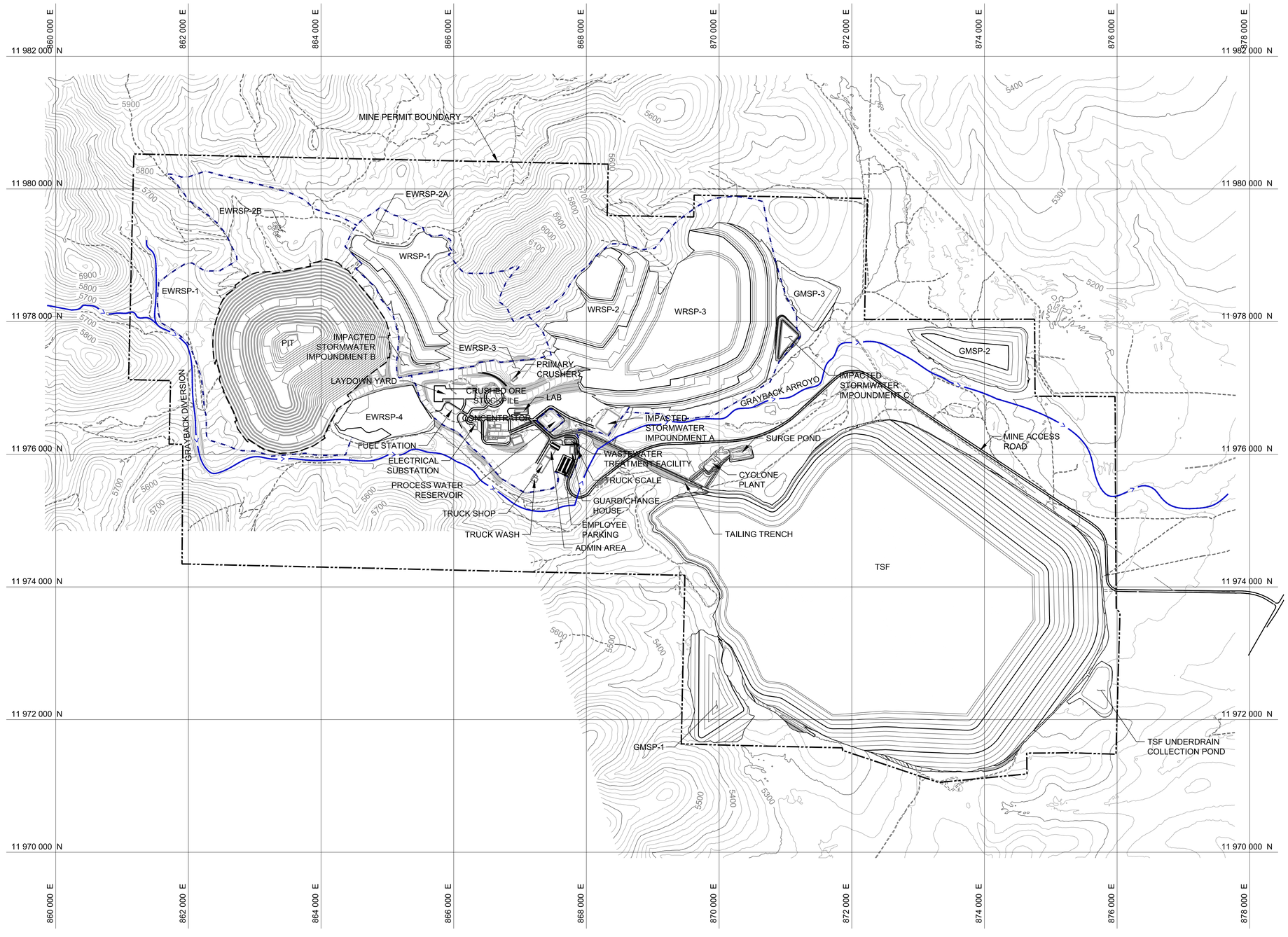
PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
GENERAL ARRANGEMENT
EXISTING SITE CONDITIONS

PROJECT NO.	CONTROL	REV.		DRAWING
1531453	0300	C	2 of 25	G-002



GENERAL LEGEND

- 5400 — EXISTING GROUND CONTOURS - 20 ft INTERVAL (ft-MSL)
- 5400 — PROPOSED DESIGN CONTOURS - 20 ft INTERVAL (ft-MSL)
- MINE PERMIT BOUNDARY
- WATERSHED BOUNDARY (BY OTHERS)
- EXISTING DIVERSION OR ARROYO
- EXISTING ROAD
- WRSP — WASTE ROCK STOCKPILE
- EWRSP — EXISTING WASTE ROCK STOCKPILE
- TSF — TAILING STORAGE FACILITY
- GMSP — GROWTH MEDIA STOCKPILE

NOTES

1. EXISTING GROUND TOPOGRAPHY WAS DEVELOPED BY COOPER AERIAL SURVEYS BASED ON JUNE 18, 2011 AERIAL SURVEY AND PROVIDED BY THEMAC RESOURCES.
2. FINAL BUILDOUT TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NEW MEXICO COPPER CORPORATION (NMCC).
3. FINAL BUILDOUT TOPOGRAPHY FOR THE TSF WAS DEVELOPED BY GOLDER AND IS FROM THE 30K TPD TAILINGS STORAGE FACILITY FEASIBILITY DESIGN REPORT (GOLDER, 2015).

0 800 1600 FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-13	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
GENERAL ARRANGEMENT AT FINAL BUILDOUT

PROJECT NO.	CONTROL	REV.		DRAWING
1531453	0300	C	3 of 25	G-003

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

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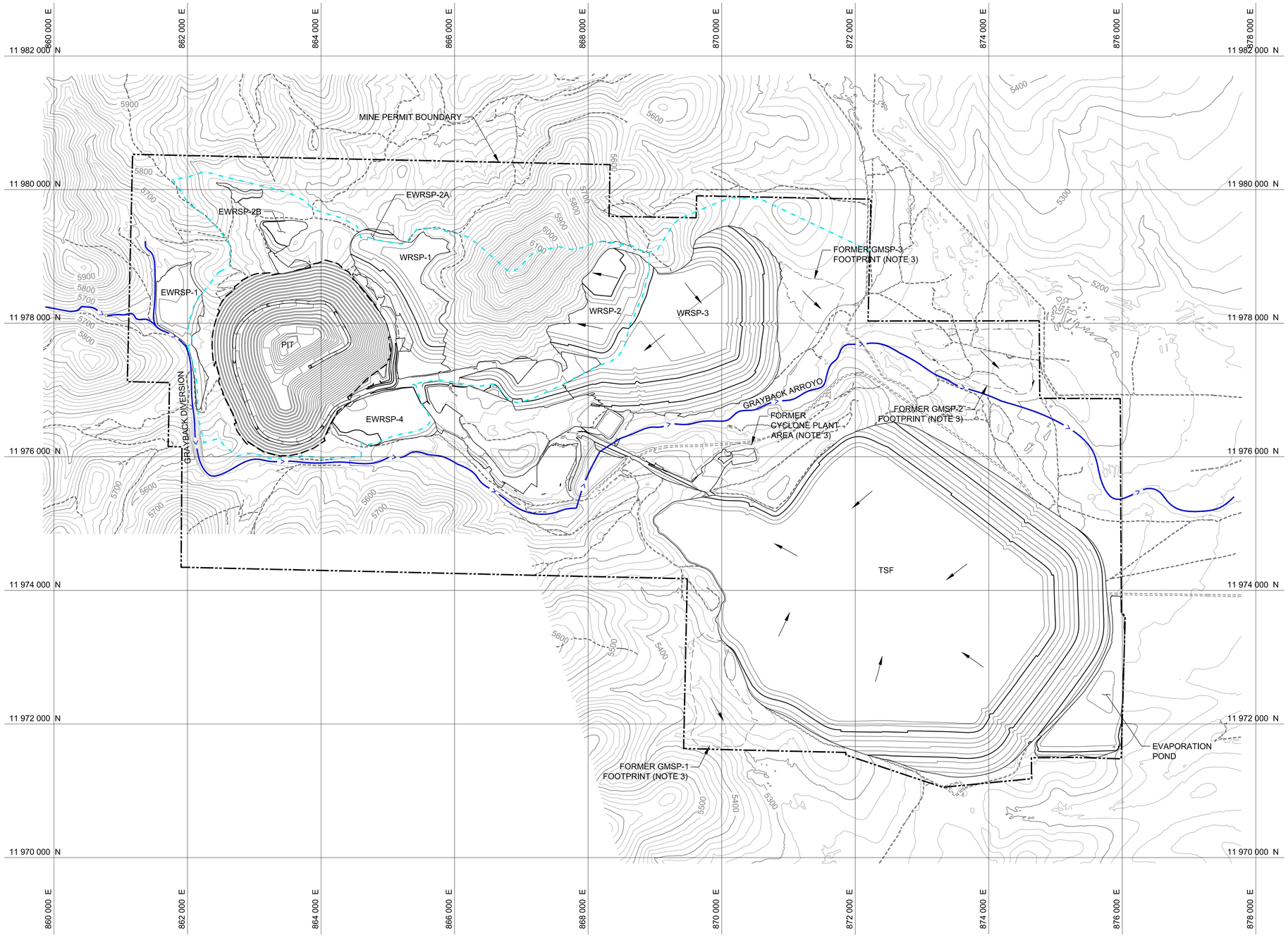

GENERAL LEGEND

- 5400 — EXISTING GROUND CONTOURS - 20 ft INTERVAL (ft-MSL)
- 5400 — PROPOSED DESIGN CONTOURS - 20 ft INTERVAL (ft-MSL)
- MINE PERMIT BOUNDARY
- RECLAMATION WATERSHED BOUNDARY
- EXISTING DIVERSION OR ARROYO
- EXISTING ROAD
- GRADE INDICATOR
- WRSP — WASTE ROCK STOCKPILE
- EWRSP — EXISTING WASTE ROCK STOCKPILE
- TSF — TAILING STORAGE FACILITY
- GMSP — GROWTH MEDIA STOCKPILE

NOTES

1. EXISTING GROUND TOPOGRAPHY WAS DEVELOPED BY COOPER AERIAL SURVEYS BASED ON JUNE 18, 2011 AERIAL SURVEY AND PROVIDED BY THEMAC RESOURCES.
2. PROPOSED DESIGN CONTOURS REPRESENT THE RECLAMATION SUBGRADE, PRE-COVER PLACEMENT TOPOGRAPHY.
3. FOOTPRINT OF FORMER GROWTH MEDIA STOCKPILES AND THE CYCLONE PLANT AREA WILL BE GRADED TO APPROXIMATE SURROUNDING TOPOGRAPHY, RIPPED AND REVEGETATED.

0 800 1600
FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-13	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
GENERAL ARRANGEMENT
FINAL RECLAMATION TOPOGRAPHY

PROJECT NO.	CONTROL	REV.		DRAWING
1531453	0300	C	4 of 25	G-004

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

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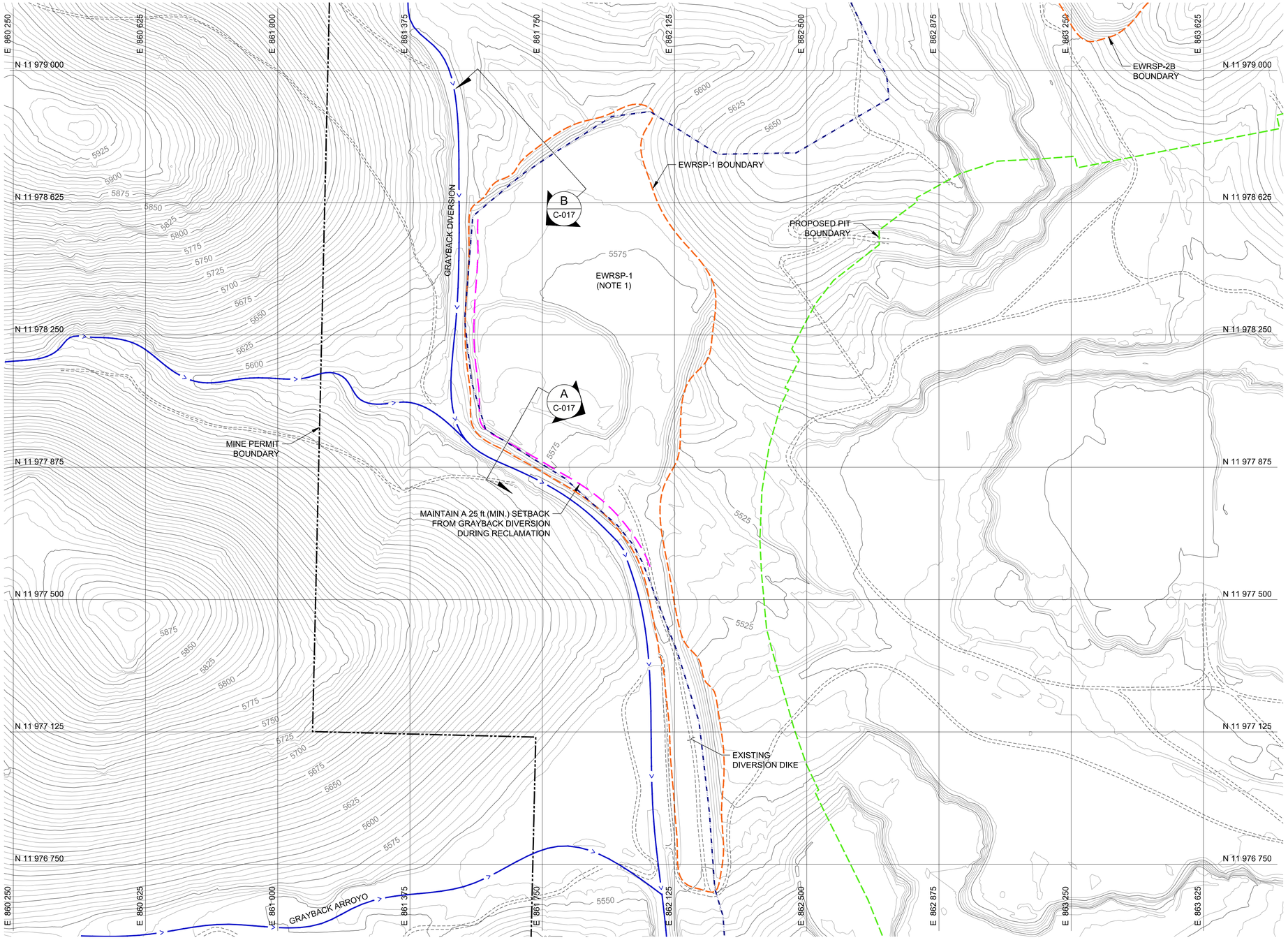

LEGEND

- 5400 — EXISTING GROUND CONTOURS - 5 ft INTERVAL (ft-MSL)
- MINE PERMIT BOUNDARY
- EXISTING FACILITY BOUNDARY (APPROXIMATE)
- PROPOSED FACILITY BOUNDARY
- WATERSHED BOUNDARY (BY OTHERS)
- EXISTING DIVERSION OR ARROYO
- EXISTING ROAD
- PROPOSED SETBACK
- A / C-017 — SECTION CALLOUT: SECTION ID, DRAWING LOCATION
- EWRSP — EXISTING WASTE ROCK STOCKPILE
- MIN. — MINIMUM

NOTES

1. FINAL BUILDOUT TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NMCC.

0 150 300
FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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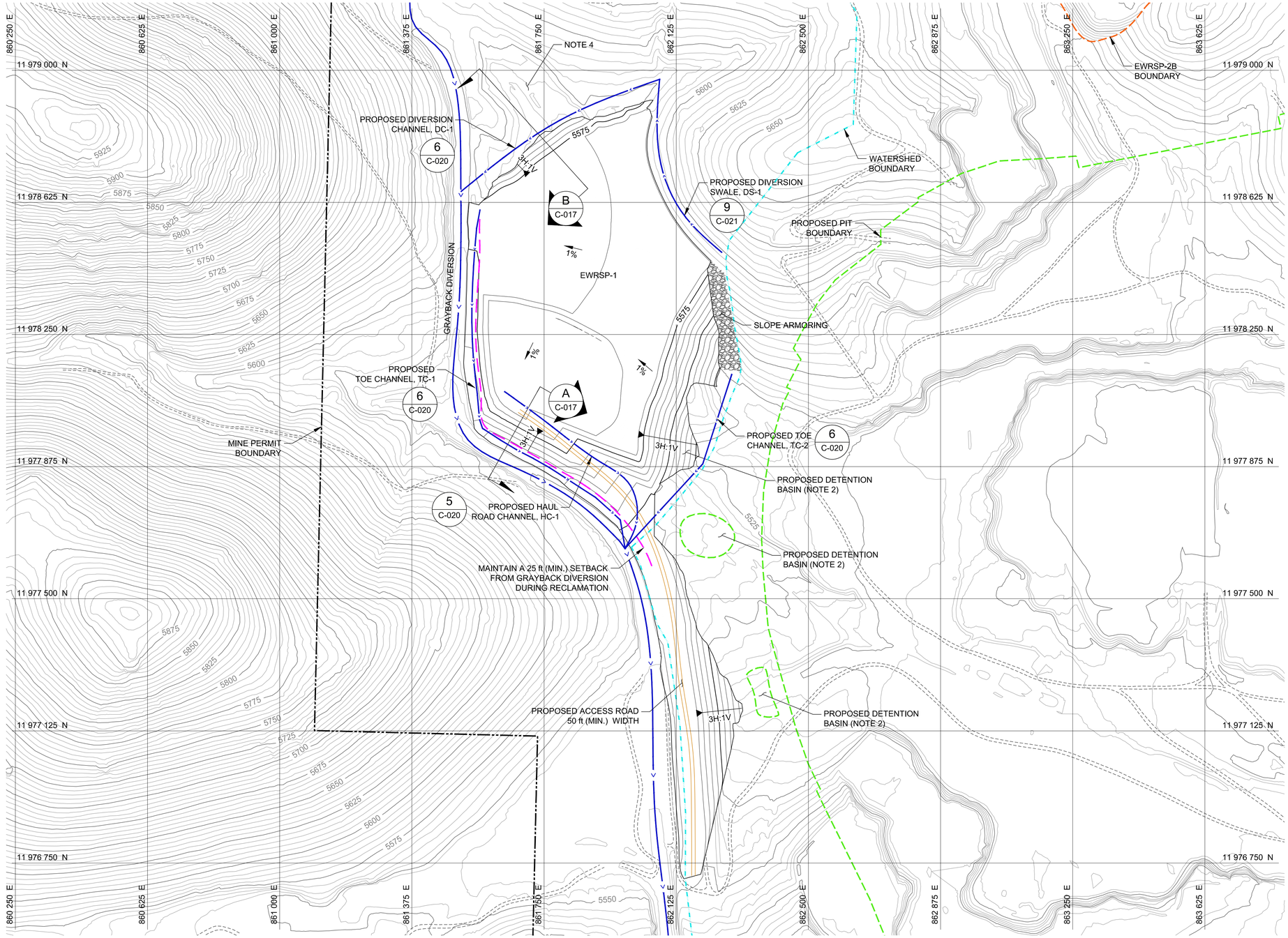
PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
EWRSP-1 EXISTING FACILITY LAYOUT

PROJECT NO.	CONTROL	REV.		DRAWING
1531453	0300	C	5 of 25	C-001



LEGEND

- 5400 — EXISTING GROUND CONTOURS - 5 ft INTERVAL (ft-MSL)
- 5400 — PROPOSED DESIGN CONTOURS - 5 ft INTERVAL (ft-MSL) (NOTE 5)
- MINE PERMIT BOUNDARY
- PROPOSED FACILITY BOUNDARY
- EXISTING FACILITY BOUNDARY (APPROXIMATE)
- RECLAMATION WATERSHED BOUNDARY
- EXISTING DIVERSION OR ARROYO
- PROPOSED CHANNEL CENTERLINE (APPROXIMATE)
- EXISTING ROAD
- PROPOSED ROAD
- PROPOSED SETBACK
- 3H:1V — SLOPE INDICATOR
- 1% — GRADE INDICATOR
- 1 / C-020 — DETAIL CALLOUT (DETAIL ID, DRAWING LOCATION)
- A / C-017 — SECTION CALLOUT (SECTION ID, DRAWING LOCATION)
- EWRSP — EXISTING WASTE ROCK STOCKPILE
- MIN. — MINIMUM
- SLOPE ARMORING

NOTES

1. FINAL BUILDOUT TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NMCC.
2. DETENTION BASINS SHALL BE CONSTRUCTED FOR EVAPORATION AND USE AS A WILDLIFE HABITAT.
3. RECLAMATION DESIGN SHALL UTILIZE 3H:1V INTERBENCH REGRADE SLOPES AND 200 FOOT INTERBENCH SLOPE LENGTHS PER NMAC 20.6.7.33. C(3). A 1% (MIN.) TOP SURFACE REGRADE GRADIENT SHALL BE ESTABLISHED PER NMAC 20.6.7.33. C(2). A 25 FOOT BENCH WIDTH, 1% BENCH CROSS SLOPE GRADIENT AND 1% LONGITUDINAL BENCH SLOPE GRADIENT WILL BE UTILIZED FOR STORMWATER CONVEYANCE.
4. PLACE FILL MATERIAL TO PROMOTE POSITIVE DRAINAGE TOWARD PROPOSED DIVERSION CHANNEL, DC-1, AND THE EXISTING GRAYBACK DIVERSION.
5. PROPOSED DESIGN CONTOURS REPRESENT THE RECLAMATION SUBGRADE, PRE-COVER PLACEMENT TOPOGRAPHY.

0 150 300 FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
EWRSP-1 REGRADE AND DRAINAGE PLAN

PROJECT NO.	CONTROL	REV.		DRAWING
1531453	0300	C	6 of 25	C-002

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

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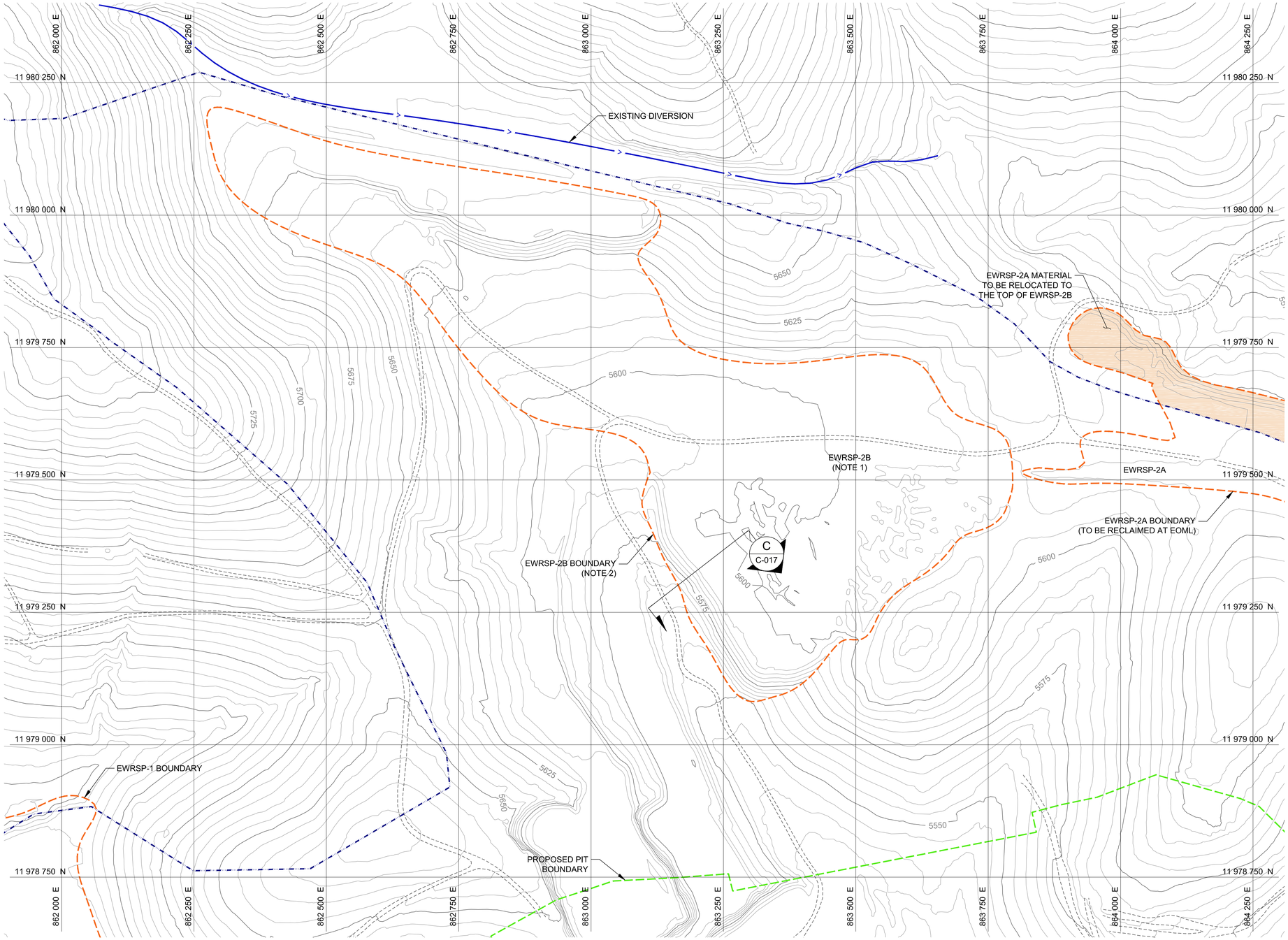

LEGEND

- 5400 — EXISTING GROUND CONTOURS - 5 ft INTERVAL (ft-MSL)
- EXISTING FACILITY BOUNDARY (APPROXIMATE)
- PROPOSED FACILITY BOUNDARY
- WATERSHED BOUNDARY (BY OTHERS)
- EXISTING DIVERSION OR ARROYO
- EXISTING ROAD
- A / C-017 — SECTION CALLOUT: SECTION ID, DRAWING LOCATION
- EWRSP — EXISTING WASTE ROCK STOCKPILE
- EOML — END OF MINE LIFE

NOTES

1. FINAL BUILDOUT TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NMCC.
2. EXISTING EWRSP-2B FACILITY FOOTPRINT INCLUDES ASSOCIATED DISTURBED AREAS.

0 100 200 FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
EWRSP-2B EXISTING FACILITY LAYOUT

PROJECT NO.	CONTROL	REV.	DRAWING
1531453	0300	C	C-003

7 of 25

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

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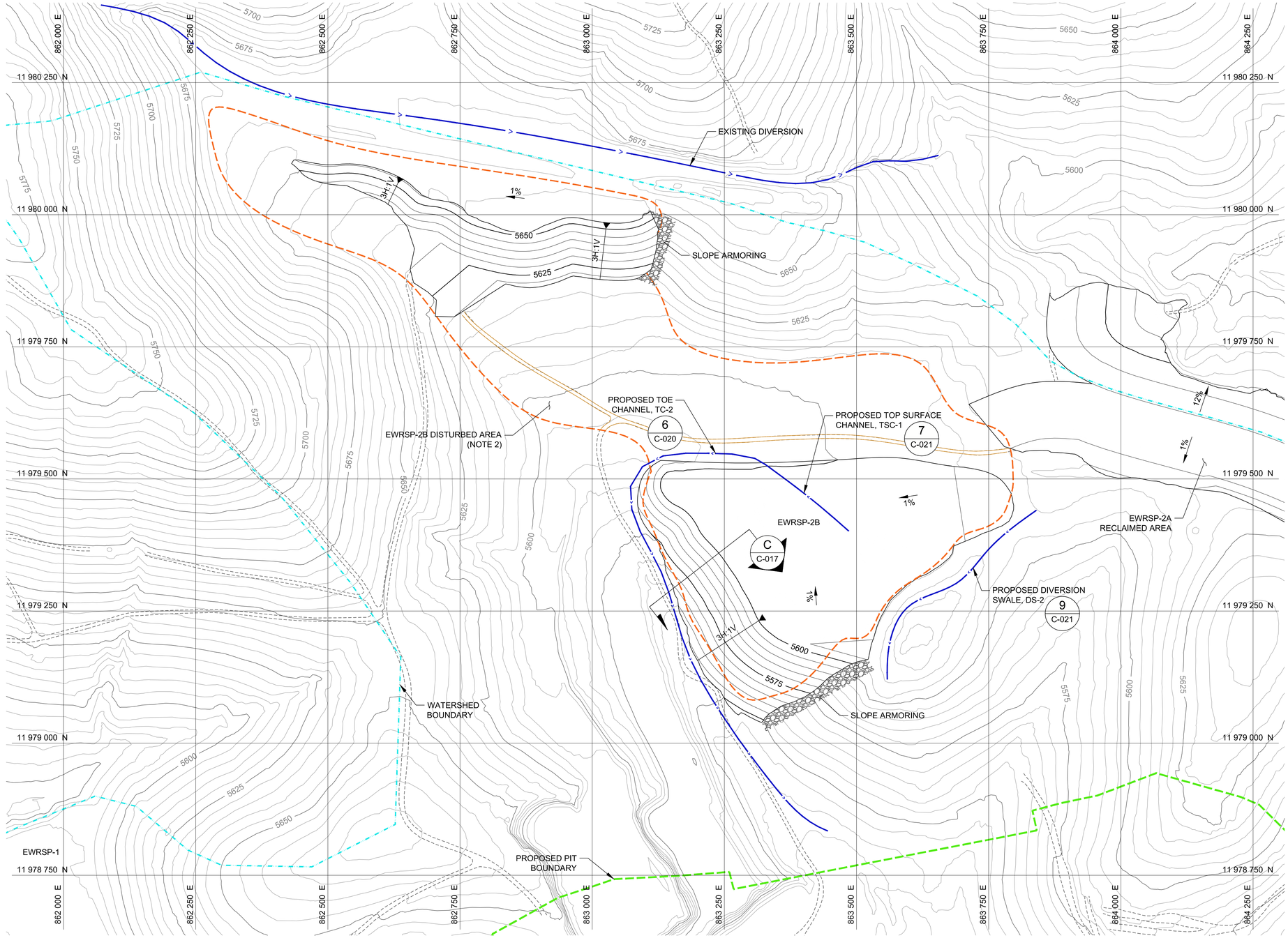

LEGEND

- 5400 — EXISTING GROUND CONTOURS - 5 ft INTERVAL (ft-MSL)
- 5400 — PROPOSED DESIGN CONTOURS - 5 ft INTERVAL (ft-MSL) (NOTE 4)
- EXISTING FACILITY BOUNDARY (APPROXIMATE)
- PROPOSED FACILITY BOUNDARY
- RECLAMATION WATERSHED BOUNDARY
- EXISTING DIVERSION OR ARROYO
- PROPOSED CHANNEL CENTERLINE (APPROXIMATE)
- EXISTING ROAD
- PROPOSED ROAD
- 3H:1V — SLOPE INDICATOR
- 1% — GRADE INDICATOR
- 1 / C-020 — DETAIL CALLOUT (DETAIL ID, DRAWING LOCATION)
- A / C-017 — SECTION CALLOUT (SECTION ID, DRAWING LOCATION)
- EWRSP — EXISTING WASTE ROCK STOCKPILE
- SLOPE ARMORING

NOTES

1. FINAL BUILDOUT TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NMCC.
2. EWRSP-2B TOP SURFACE SHALL BE GRADED TO PROPOSED TOE CHANNEL, TC-2, FOR FLOW CONVEYANCE TOWARD PIT PERIMETER CHANNEL, PC-1. EWRSP-2B FACILITY FOOTPRINT INCLUDES ASSOCIATED DISTURBED AREAS TO BE GRADED, RIPPED AND VEGETATED.
3. EWRSP-2B RECLAMATION DESIGN SHALL UTILIZE 3H:1V INTERBENCH REGRADE SLOPES AND 200 FOOT INTERBENCH SLOPE LENGTHS PER NMAC 20.6.7.33. C(2). A 1% (MIN.) TOP SURFACE REGRADE GRADIENT SHALL BE ESTABLISHED PER NMAC 20.6.7.33. C(2). A 25 FOOT BENCH WIDTH, 1% BENCH CROSS SLOPE GRADIENT AND 1% LONGITUDINAL BENCH SLOPE GRADIENT WILL BE UTILIZED FOR STORWATER CONVEYANCE.
4. PROPOSED DESIGN CONTOURS REPRESENT THE RECLAMATION SUBGRADE, PRE-COVER PLACEMENT TOPOGRAPHY.

0 100 200 FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
EWRSP-2B REGRADE AND DRAINAGE PLAN

PROJECT NO.	CONTROL	REV.	DRAWING
1531453	0300	C	8 of 25 C-004

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

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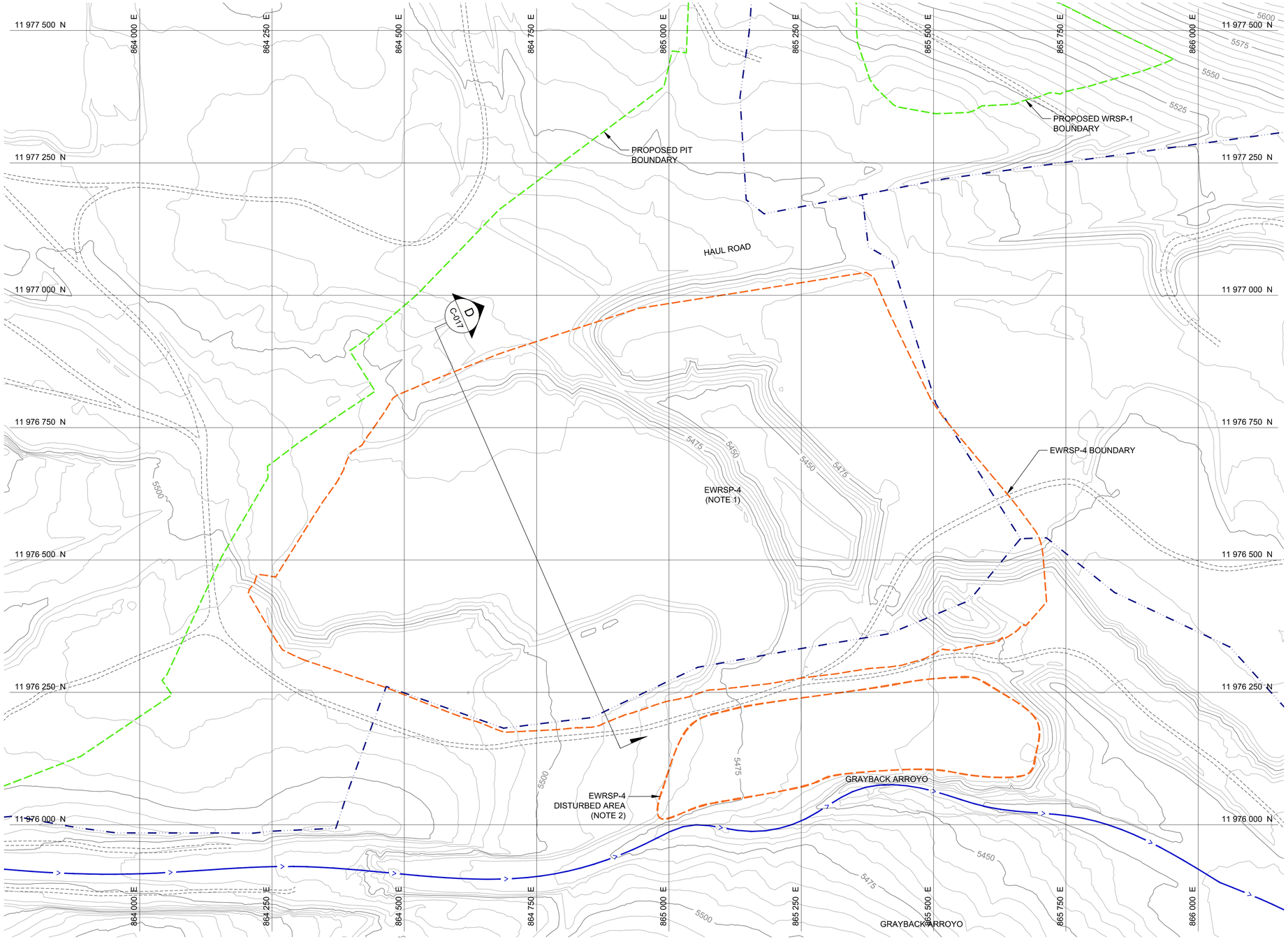

LEGEND

- 5400 — EXISTING GROUND CONTOURS - 5 ft INTERVAL (ft-MSL)
- EXISTING FACILITY BOUNDARY (APPROXIMATE)
- PROPOSED FACILITY BOUNDARY
- WATERSHED BOUNDARY (BY OTHERS)
- EXISTING DIVERSION OR ARROYO
- EXISTING ROAD
- A / C-017 — SECTION CALLOUT, SECTION ID, DRAWING LOCATION
- EWRSP — EXISTING WASTE ROCK STOCKPILE
- WRSP — WASTE ROCK STOCKPILE

NOTES

1. FINAL BUILDOUT TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NMCC.
2. EXISTING EWRSP-4 FACILITY FOOTPRINT INCLUDES ASSOCIATED DISTURBED AREAS.

0 100 200 FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
EWRSP-4 EXISTING FACILITY LAYOUT

PROJECT NO.	CONTROL	REV.	DRAWING
1531453	0300	C	C-005

9 of 25

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

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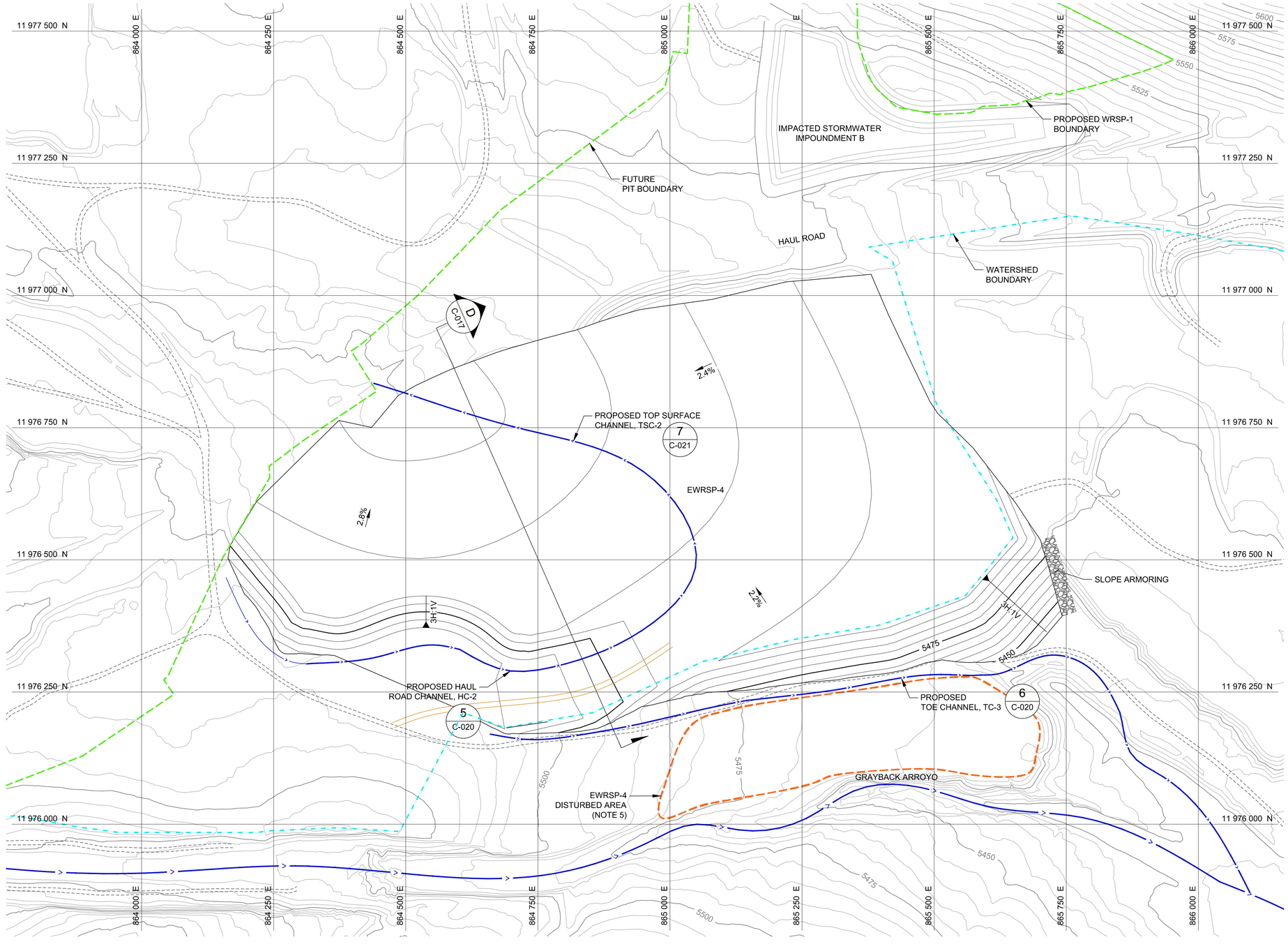

LEGEND

- EXISTING GROUND CONTOURS - 5 ft INTERVAL (ft-MSL)
- PROPOSED DESIGN CONTOURS - 5 ft INTERVAL (ft-MSL) (NOTE 4)
- EXISTING FACILITY BOUNDARY (APPROXIMATE)
- PROPOSED FACILITY BOUNDARY
- RECLAMATION WATERSHED BOUNDARY
- EXISTING DIVERSION OR ARROYO
- PROPOSED CHANNEL CENTERLINE (APPROXIMATE)
- EXISTING ROAD
- PROPOSED ROAD
- 3H:1V — SLOPE INDICATOR
- 1% — GRADE INDICATOR
- 1 / C-020 — DETAIL CALLOUT (DETAIL ID / DRAWING LOCATION)
- A / C-017 — SECTION CALLOUT (SECTION ID / DRAWING LOCATION)
- WRSP — WASTE ROCK STOCKPILE
- EWRSP — EXISTING WASTE ROCK STOCKPILE
- SLOPE ARMORING

NOTES

1. FINAL BUILDOUT TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NMCC.
2. EWRSP-4 TOP SURFACE SHALL BE GRADED TO A PROPOSED HAUL ROAD CHANNEL, HC-3, FOR FLOW CONVEYANCE TOWARD THE PIT.
3. EWRSP-4 RECLAMATION DESIGN SHALL UTILIZE 3H:1V INTERBENCH REGRADE SLOPES AND 200 FOOT INTERBENCH SLOPE LENGTHS PER NMAC 20.6.7.33. C(3). A 1% (MIN.) TOP SURFACE REGRADE GRADIENT SHALL BE ESTABLISHED PER NMAC 20.6.7.33. C(2). A 25 FOOT BENCH WIDTH, 1% BENCH CROSS SLOPE GRADIENT, AND 1% LONGITUDINAL BENCH SLOPE GRADIENT WILL BE UTILIZED FOR STORMWATER CONVEYANCE.
4. PROPOSED DESIGN CONTOURS REPRESENT THE RECLAMATION SUBGRADE, PRE-COVER PLACEMENT TOPOGRAPHY.
5. EXISTING EWRSP-4 FACILITY FOOTPRINT INCLUDES ASSOCIATED DISTURBED AREAS.

0 100 200 FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENGY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
EWRSP-4 REGRADE AND DRAINAGE PLAN

PROJECT NO.	CONTROL	REV.	DRAWING
1531453	0300	C	C-006

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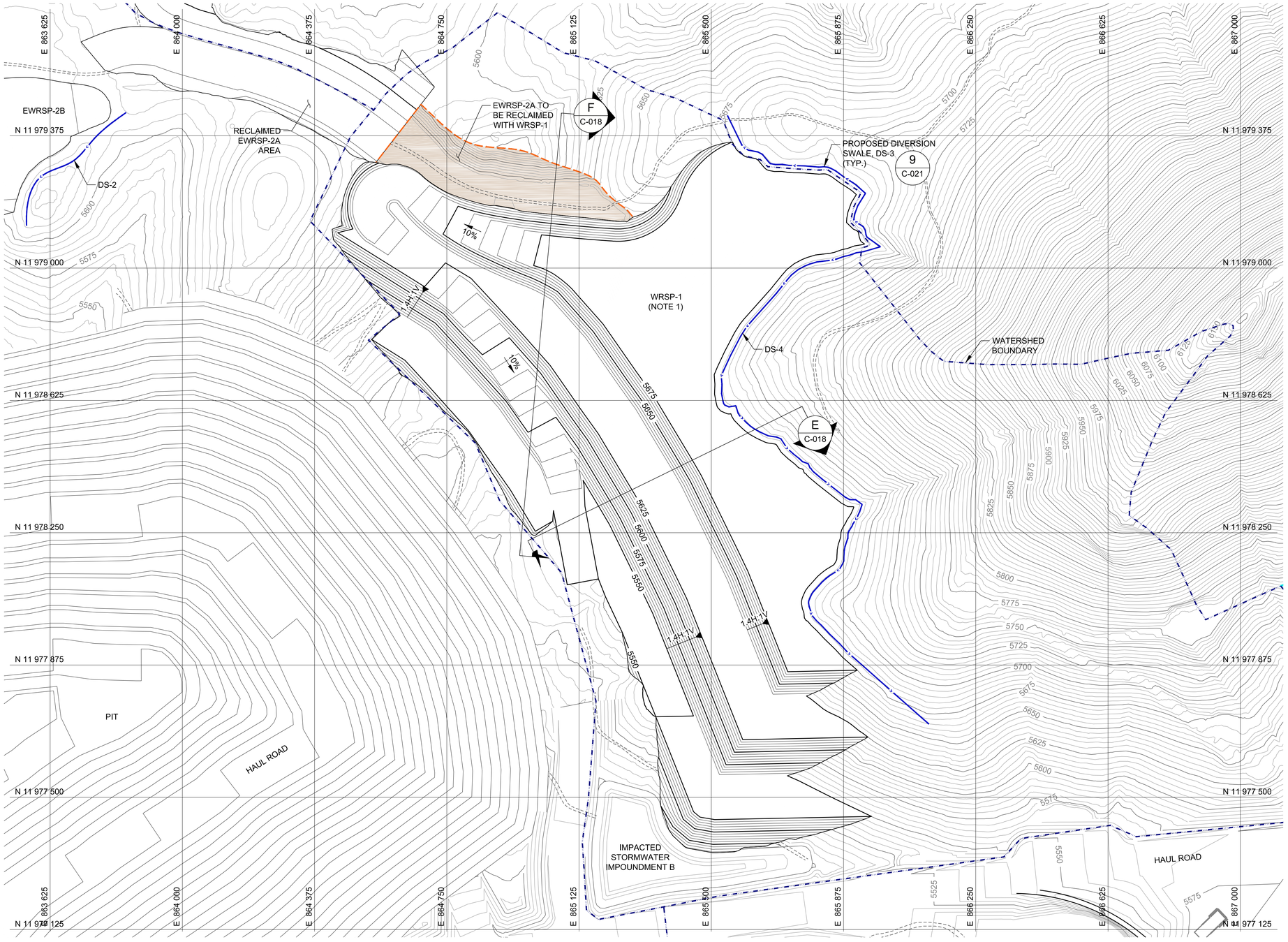

LEGEND

- 5400 — EXISTING GROUND CONTOURS - 5 ft INTERVAL (ft-MSL)
- 5400 — DESIGN CONTOURS - 5 ft INTERVAL (ft-MSL) (NOTE 1)
- EXISTING FACILITY BOUNDARY (APPROXIMATE)
- WATERSHED BOUNDARY (BY OTHERS)
- EXISTING DIVERSION OR ARROYO
- EXISTING ROAD
- 3H:1V — SLOPE INDICATOR
- 1% — GRADE INDICATOR
- A / C-017 — SECTION CALLOUT, SECTION ID, DRAWING LOCATION
- WRSP — WASTE ROCK STOCKPILE
- EWRSP — EXISTING WASTE ROCK STOCKPILE
- TYP. — TYPICAL

NOTES

1. FINAL BUILDOUT TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NMCC.

0 150 300 FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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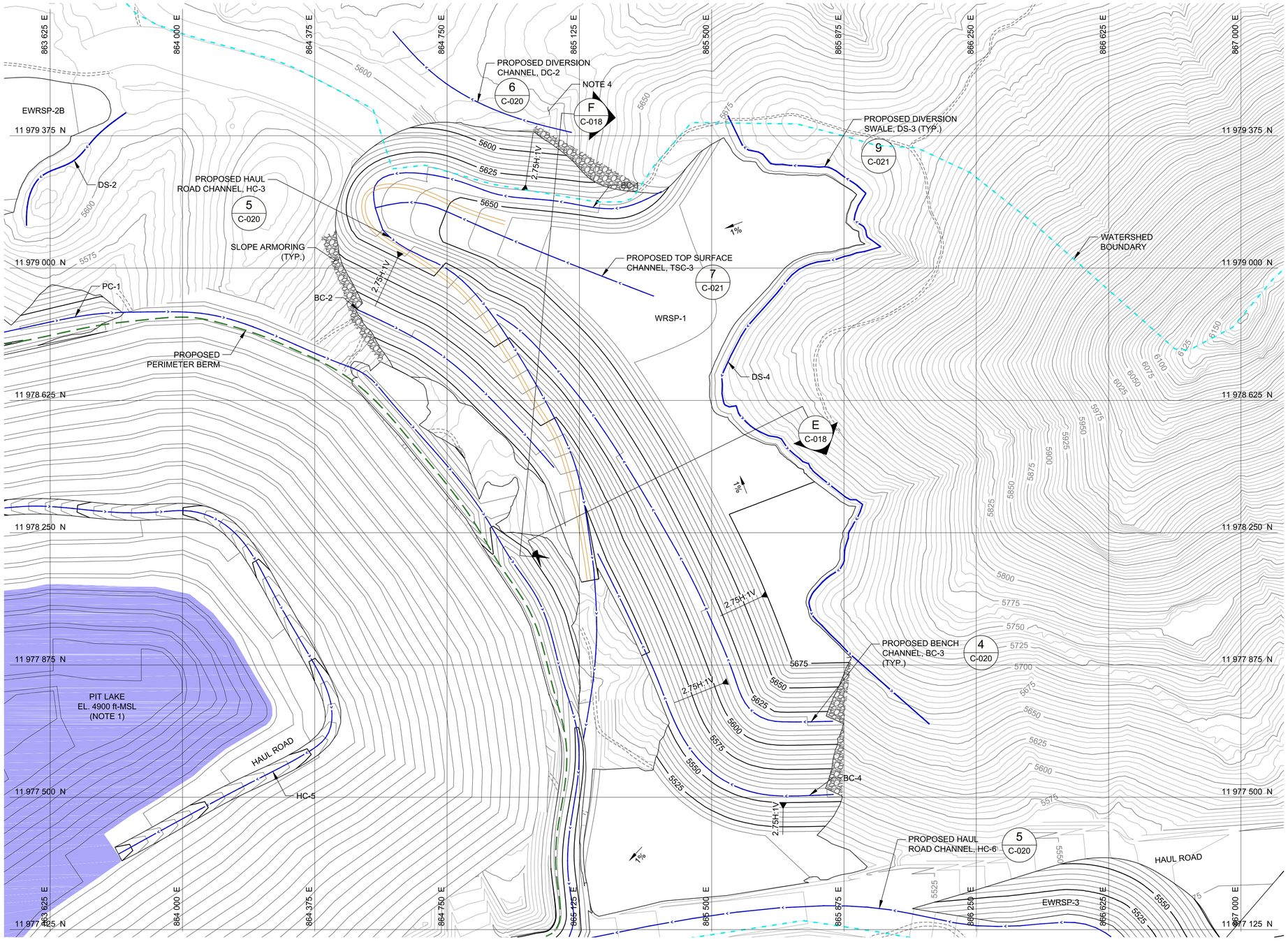
PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
WRSP-1 AT FINAL BUILDOUT

PROJECT NO.	CONTROL	REV.		DRAWING
1531453	0300	C	11 of 25	C-007



LEGEND

- 5400 — EXISTING GROUND CONTOURS - 5 ft INTERVAL (ft-MSL)
- 5400 — PROPOSED DESIGN CONTOURS - 5 ft INTERVAL (ft-MSL) (NOTE 5)
- RECLAMATION WATERSHED BOUNDARY
- EXISTING DIVERSION OR ARROYO
- PROPOSED CHANNEL CENTERLINE (APPROXIMATE)
- EXISTING ROAD
- PROPOSED ROAD
- PROPOSED PERIMETER BERM
- 3H:1V — SLOPE INDICATOR
- 1% — GRADE INDICATOR
- 1 / C-020 — DETAIL CALLOUT, DETAIL ID, DRAWING LOCATION
- A / C-017 — SECTION CALLOUT, SECTION ID, DRAWING LOCATION
- WRSP — WASTE ROCK STOCKPILE
- EWRSP — EXISTING WASTE ROCK STOCKPILE
- TYP. — TYPICAL
- PIT LAKE EL. 4900 ft-MSL (NOTE 1)
- SLOPE ARMORING

NOTES

1. FINAL BUILDOUT TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NMCC. PIT LAKE ELEVATION PROVIDED BY NMCC.
2. WRSP-1 TOP SURFACE SHALL BE GRADED TO A HAUL ROAD CHANNEL FOR FLOW CONVEYANCE TOWARD THE PIT.
3. WRSP-1 RECLAMATION DESIGN SHALL UTILIZE 2.75H:1V INTERBENCH REGRADE SLOPES AND 200 FOOT INTERBENCH SLOPE LENGTHS PER NMAC 20.6.7.33. C(3). A 1% (MIN.) TOP SURFACE REGRADE GRADIENT SHALL BE ESTABLISHED PER NMAC 20.6.7.33. C(2). A 25 FOOT BENCH WIDTH, 1% BENCH CROSS SLOPE GRADIENT AND 1% LONGITUDINAL BENCH SLOPE GRADIENT WILL BE UTILIZED FOR STORMWATER CONVEYANCE.
4. PLACE FILL MATERIAL TO PROMOTE DRAINAGE AWAY FROM THE RECLAIMED WRSP-1 TOE.
5. PROPOSED DESIGN CONTOURS REPRESENT THE RECLAMATION SUBGRADE, PRE-COVER PLACEMENT TOPOGRAPHY.

0 150 300 FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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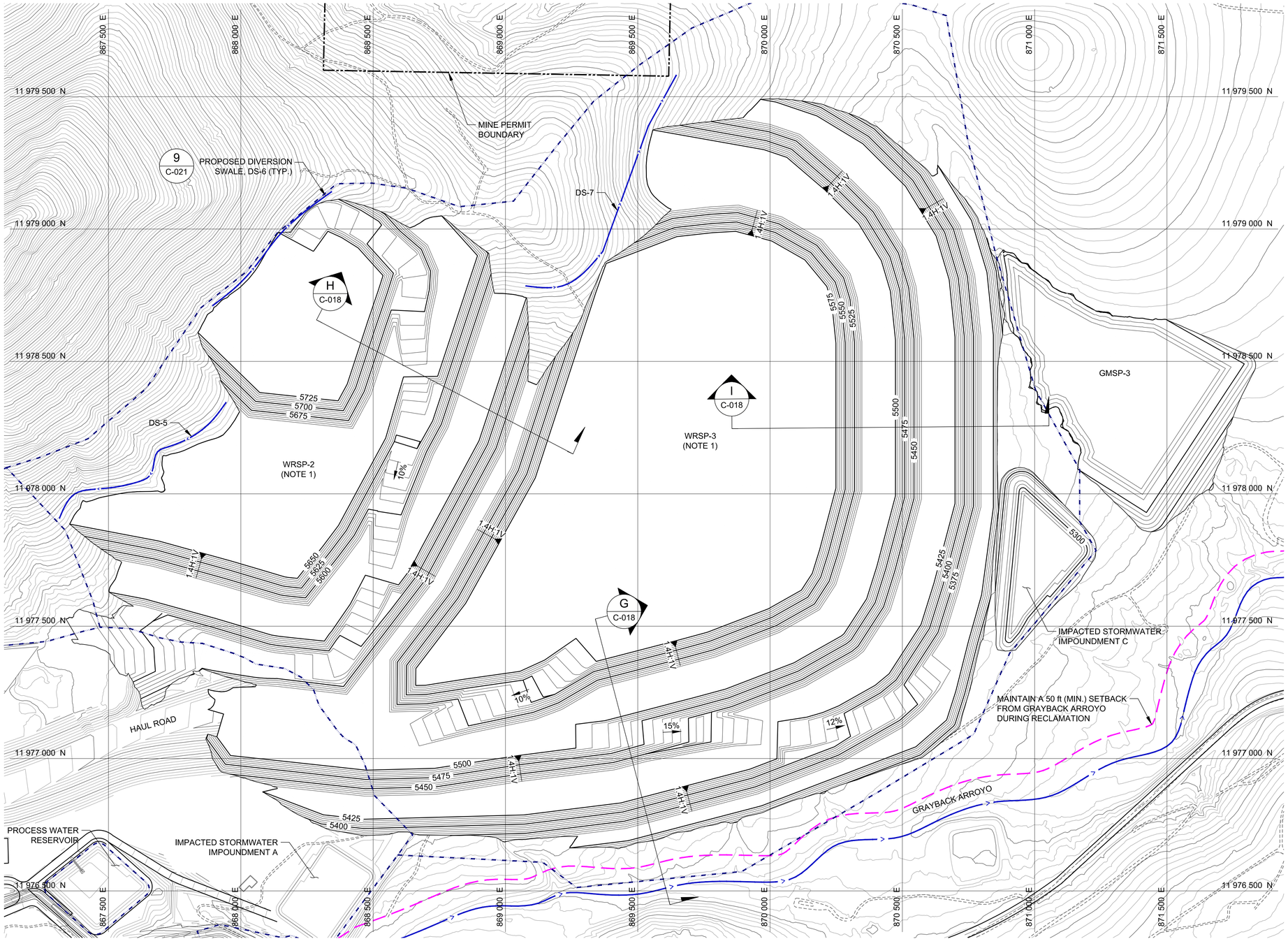
PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
WRSP-1 REGRADE AND DRAINAGE PLAN

PROJECT NO.	CONTROL	REV.		DRAWING
1531453	0300	C	12 of 25	C-008



LEGEND

- 5400 — EXISTING GROUND CONTOURS - 5 ft INTERVAL (ft-MSL)
- 5400 — PROPOSED DESIGN CONTOURS - 5 ft INTERVAL (ft-MSL)
- MINE PERMIT BOUNDARY
- WATERSHED BOUNDARY (BY OTHERS)
- EXISTING DIVERSION OR ARROYO
- EXISTING ROAD
- SETBACK
- 3H:1V — SLOPE INDICATOR
- 1% — GRADE INDICATOR
- A / C-017 — SECTION CALLOUT, SECTION ID, DRAWING LOCATION

WRSP	WASTE ROCK STOCKPILE
GMSP	GROWTH MEDIA STOCKPILE
MIN.	MINIMUM
TYP.	TYPICAL

NOTES

1. FINAL BUILDOUT TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NMCC.

0 200 400 FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
WRSP-2 AND WRSP-3 AT FINAL BUILDOUT

PROJECT NO.	CONTROL	REV.	DRAWING
1531453	0300	C	C-009

13 of 25

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

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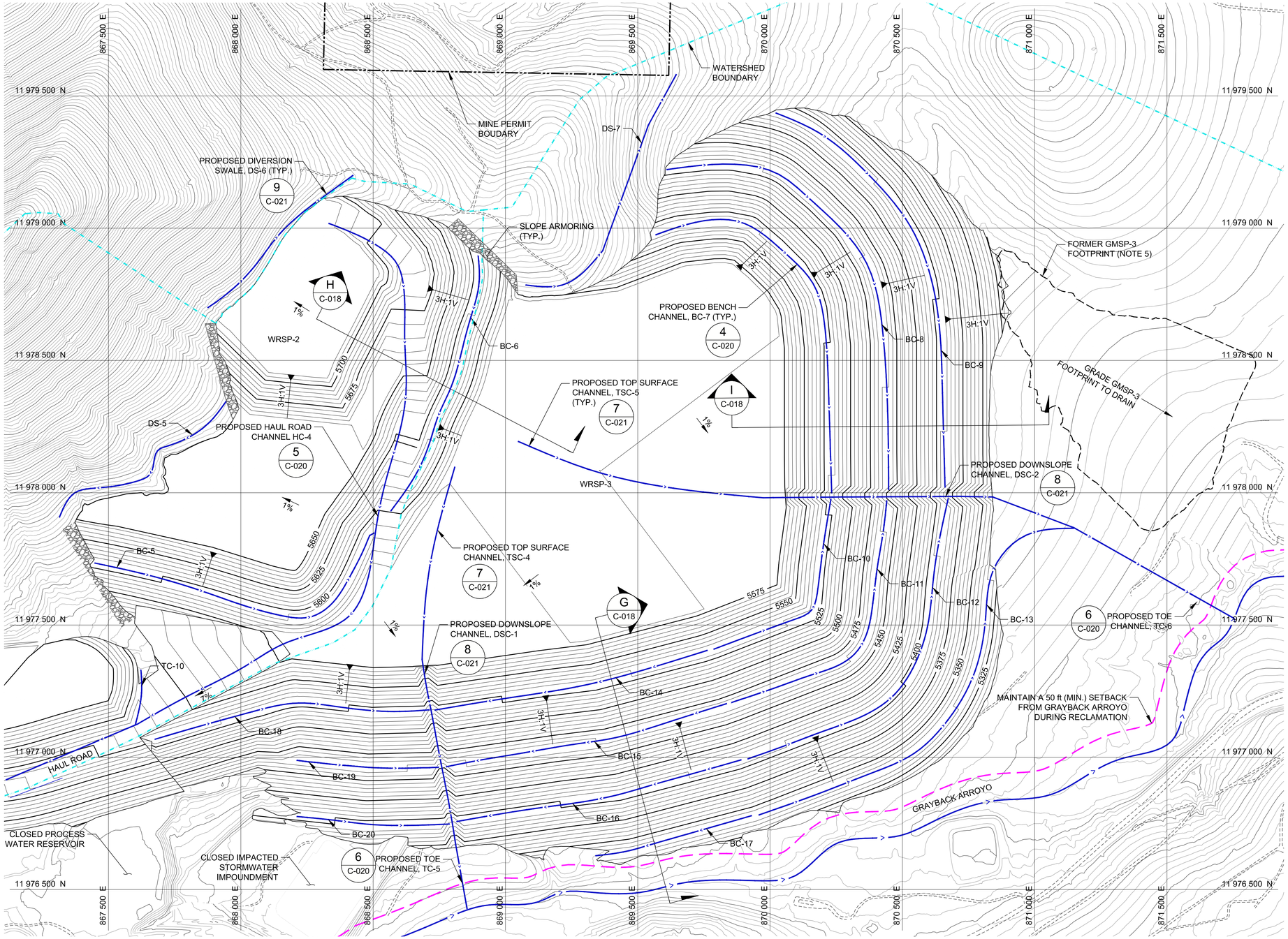

LEGEND

- 5400 — EXISTING GROUND CONTOURS - 5 ft INTERVAL (ft-MSL)
- 5400 — PROPOSED DESIGN CONTOURS - 5 ft INTERVAL (ft-MSL) (NOTE 6)
- MINE PERMIT BOUNDARY
- RECLAMATION WATERSHED BOUNDARY
- EXISTING DIVERSION OR ARROYO
- PROPOSED CHANNEL CENTERLINE (APPROXIMATE)
- EXISTING ROAD
- PROPOSED ROAD
- SETBACK
- 3H:1V — SLOPE INDICATOR
- 1% — GRADE INDICATOR
- 1 / C-020 — DETAIL CALLOUT: DETAIL ID, DRAWING LOCATION
- A / C-017 — SECTION CALLOUT: SECTION ID, DRAWING LOCATION
- WRSP — WASTE ROCK STOCKPILE
- TYP. — TYPICAL
- SLOPE ARMORING

NOTES

1. FINAL BUILDOUT TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NMCC.
2. WRSP-2 AND WRSP-3 TOP SURFACE SHALL BE GRADED TOWARD THE SOUTH, WEST AND EAST, AND UTILIZE PLANNED HAUL ROADS WHERE PRACTICAL FOR STORMWATER CONVEYANCE.
3. WRSP-2 AND WRSP-3 RECLAMATION DESIGN SHALL UTILIZE 3H:1V INTERBENCH REGRADE SLOPES AND 200 FOOT INTERBENCH SLOPE LENGTHS PER NMAC 20.6.7.33. C(3). A 1% (MIN.) TOP SURFACE REGRADE GRADIENT SHALL BE ESTABLISHED PER NMAC 20.6.7.33. C(2). A 25 FOOT BENCH WIDTH, 1% BENCH CROSS SLOPE GRADIENT AND 1% LONGITUDINAL BENCH SLOPE GRADIENT WILL BE UTILIZED FOR STORMWATER CONVEYANCE.
4. IMPACTED STORMWATER IMPOUNDMENT A AND THE PROCESS WATER RESERVOIR TO BE RECLAIMED AS PART OF THE PLANT AREA RECLAMATION PLAN (SEE DRAWING C-016).
5. FOOTPRINT OF FORMER GROWTH MEDIA STOCKPILE 3 WILL BE GRADED TO APPROXIMATE SURROUNDING TOPOGRAPHY, RIPPED AND REVEGETATED.
6. PROPOSED DESIGN CONTOURS REPRESENT THE RECLAMATION SUBGRADE, PRE-COVER PLACEMENT TOPOGRAPHY.

0 200 400 FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
WRSP-2 AND WRSP-3 REGRADE AND DRAINAGE PLAN

PROJECT NO.	CONTROL	REV.		DRAWING
1531453	0300	C	14 of 25	C-010

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

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WRSP-3
GMSP-2
GMSP-1
GRAYBACK ARROYO
CYCLONE STATION PAD
SURGE POND
SECONDARY CONTAINMENT BERM
20 in DIAMETER HDPE PIPELINE
TSF TOE TO REMAIN FIXED DURING RECLAMATION
MINE PERMIT BOUNDARY
TSF (NOTE 2)
UNDERDRAIN COLLECTION POND
3.6H:1V
1%
K C-019
J C-019
L C-019

LEGEND

- 5400 — EXISTING GROUND CONTOURS - 5 ft INTERVAL (ft-MSL)
- 5400 — PROPOSED DESIGN CONTOURS - 5 ft INTERVAL (ft-MSL) (NOTES 1 AND 2)
- MINE PERMIT BOUNDARY
- WATERSHED BOUNDARY (BY OTHERS)
- EXISTING DIVERSION OR ARROYO
- EXISTING ROAD
- 3H:1V — SLOPE INDICATOR
- 1% — GRADE INDICATOR
- A / C-017 — SECTION CALLOUT (SECTION ID, DRAWING LOCATION)
- WRSP — WASTE ROCK STOCKPILE
- GMSP — GROWTH MEDIA STOCKPILE
- TSF — TAILING STORAGE FACILITY

NOTES

1. FINAL BUILDOUT TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NMCC.
2. FINAL BUILDOUT TOPOGRAPHY FOR THE TSF WAS DEVELOPED BY GOLDER AND IS FROM THE 30K TPD TAILINGS STORAGE FACILITY FEASIBILITY DESIGN REPORT (GOLDER, 2015).

0 400 800 FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
TSF AT FINAL BUILDOUT

PROJECT NO.	CONTROL	REV.		DRAWING
1531453	0300	C	15 of 25	C-011

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

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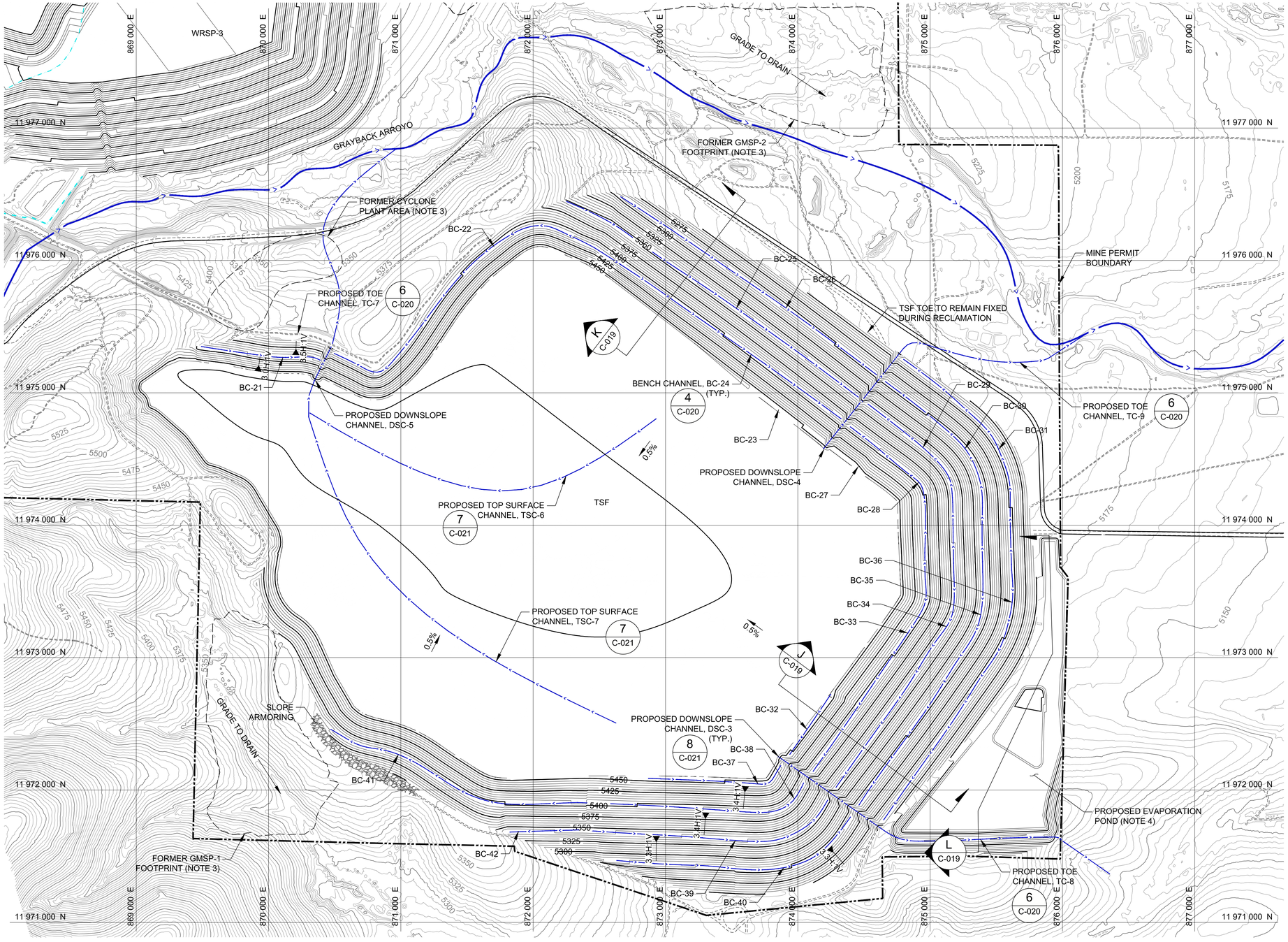

LEGEND

- EXISTING GROUND CONTOURS - 5 ft INTERVAL (ft-MSL)
- PROPOSED DESIGN CONTOURS - 5 ft INTERVAL (ft-MSL) (NOTE 5)
- MINE PERMIT BOUNDARY
- RECLAMATION WATERSHED BOUNDARY
- EXISTING DIVERSION OR ARROYO
- PROPOSED CHANNEL CENTERLINE (APPROXIMATE)
- EXISTING ROAD
- PROPOSED ROAD
- SETBACK
- SLOPE INDICATOR
- GRADE INDICATOR
- DETAIL CALLOUT / DETAIL ID / DRAWING LOCATION
- SECTION CALLOUT / SECTION ID / DRAWING LOCATION
- WRSP — WASTE ROCK STOCKPILE
- TSF — TAILING STORAGE FACILITY
- SLOPE ARMORING

NOTES

1. FINAL BUILDOUT TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NMCC.
2. RECLAMATION DESIGN SHALL UTILIZE 3H:1V INTERBENCH REGRADE SLOPES AND 200 FOOT INTERBENCH SLOPE LENGTHS PER NMAC 20.6.7.33. C(3). A 0.5% (MIN.) TOP SURFACE REGRADE GRADIENT SHALL BE ESTABLISHED PER NMAC 20.6.7.33. C(1). A 25 FOOT BENCH WIDTH, 1% BENCH CROSS SLOPE GRADIENT AND 1% LONGITUDINAL BENCH SLOPE GRADIENT WILL BE UTILIZED FOR STORMWATER CONVEYANCE.
3. FOOTPRINT OF FORMER GROWTH MEDIA STOCKPILES AND CYCLONE PLANT AREA WILL BE GRADED TO APPROXIMATE SURROUNDING TOPOGRAPHY, RIPPED AND REVEGETATED.
4. EVAPORATION POND WILL BE CONSTRUCTED IN YEAR 5 FOLLOWING CESSATION OF MINING, NEAR THE END OF THE ACTIVE EVAPORATION PROGRAM. EVAPORATION POND WILL BE RECLAIMED AT THE END OF THE PASSIVE EVAPORATION PROGRAM.
5. PROPOSED DESIGN CONTOURS REPRESENT THE RECLAMATION SUBGRADE, PRE-COVER PLACEMENT TOPOGRAPHY.

0 400 800 FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016--09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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PROJECT
COPPER FLAT PROJECT
MINE PERMIT CLOSURE DESIGN

TITLE
TSF RECLAMATION AND DRAINAGE PLAN

PROJECT NO.	CONTROL	REV.	DRAWING
1531453	0300	C	C-012

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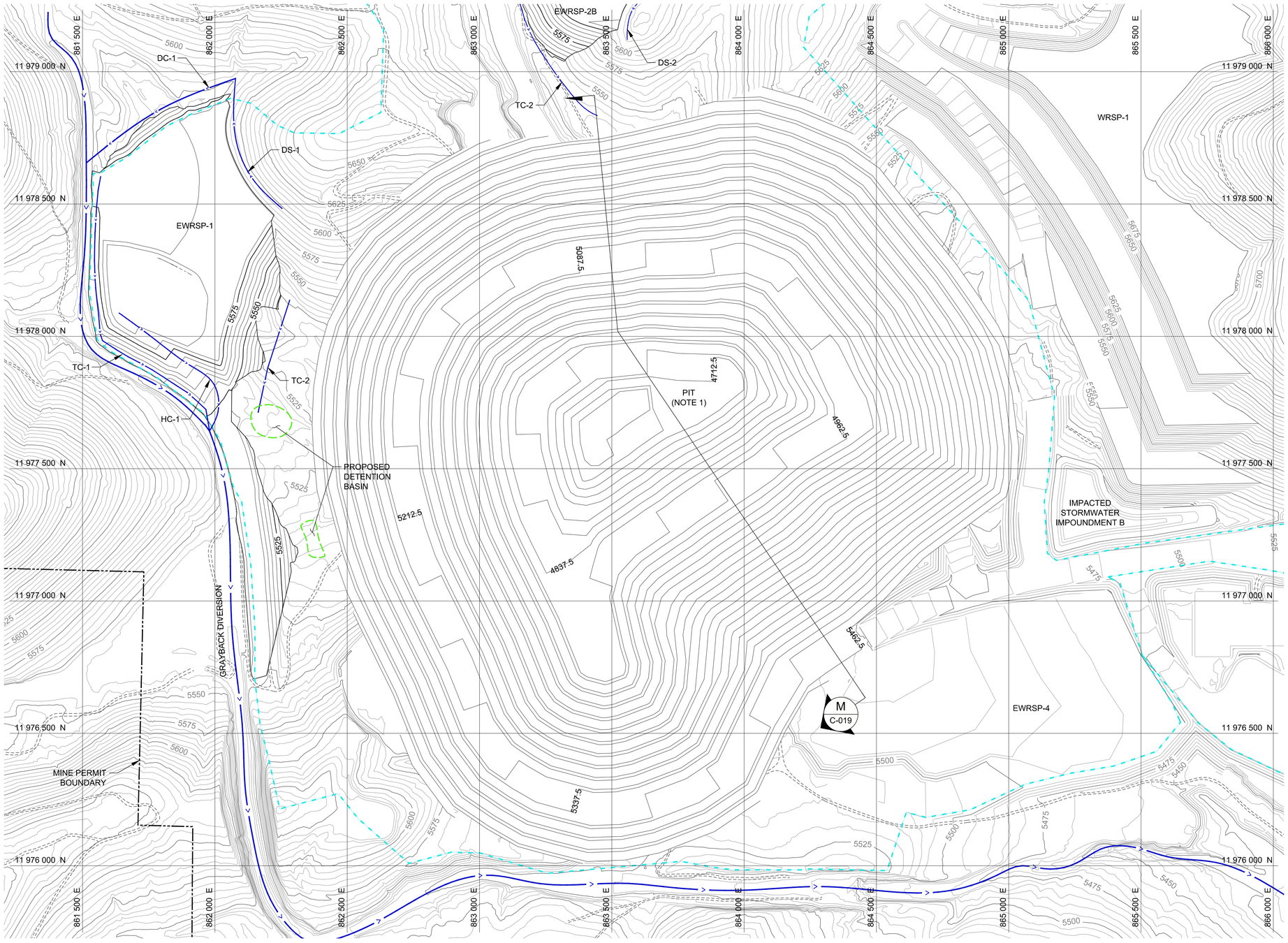

LEGEND

- EXISTING GROUND CONTOURS - 5 ft INTERVAL (ft-MSL)
- PROPOSED DESIGN CONTOURS - 5 ft INTERVAL (ft-MSL)
- MINE PERMIT BOUNDARY
- EXISTING FACILITY BOUNDARY (APPROXIMATE)
- PROPOSED FACILITY BOUNDARY
- RECLAMATION WATERSHED BOUNDARY
- EXISTING DIVERSION OR ARROYO
- EXISTING ROAD
- SECTION CALLOUT / SECTION ID / DRAWING LOCATION (A / C-017)
- WRSP — WASTE ROCK STOCKPILE
- EWRSP — EXISTING WASTE ROCK STOCKPILE

NOTES

1. PLANNED END OF MINE LIFE TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NMCC.

0 200 400 FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
PIT AT FINAL BUILDOUT

PROJECT NO.	CONTROL	REV.		DRAWING
1531453	0300	C	17 of 25	C-013

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

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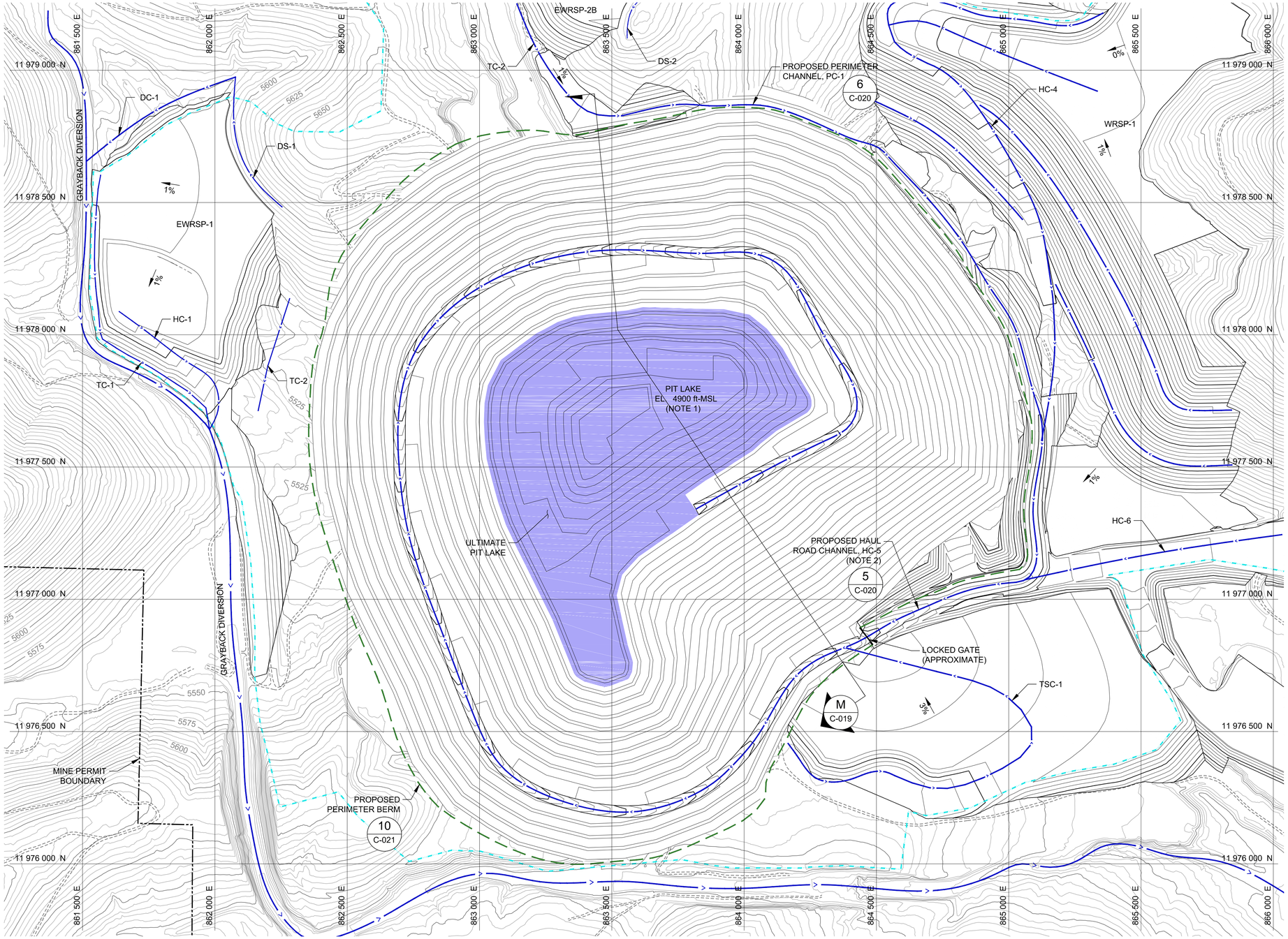

LEGEND

- 5400 — EXISTING GROUND CONTOURS - 5 ft INTERVAL (ft-MSL)
- 5400 — PROPOSED DESIGN CONTOURS - 5 ft INTERVAL (ft-MSL) (NOTE 4)
- MINE PERMIT BOUNDARY
- RECLAMATION WATERSHED BOUNDARY
- EXISTING DIVERSION OR ARROYO
- PROPOSED CHANNEL CENTERLINE (APPROXIMATE)
- EXISTING ROAD
- PROPOSED PERIMETER BERM
- 1% — GRADE INDICATOR
- 1 / C-020 — DETAIL CALLOUT, DETAIL ID, DRAWING LOCATION
- A / C-017 — SECTION CALLOUT, SECTION ID, DRAWING LOCATION
- WRSP — WASTE ROCK STOCKPILE
- EWRSP — EXISTING WASTE ROCK STOCKPILE
- PIT LAKE EL. 4900 ft-MSL (NOTE 1)

NOTES

1. FINAL BUILDOUT TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NMCC. PIT LAKE ELEVATION PROVIDED BY NMCC.
2. THE PLANNED HAUL ROADS SHALL BE UTILIZED FOR STORMWATER CONVEYANCE TO THE PIT.
3. ASSUMED 100 foot WIDE DISTURBANCE AREA AROUND PERIMETER OF THE PIT TO BE RECLAIMED.
4. PROPOSED DESIGN CONTOURS REPRESENT THE RECLAMATION SUBGRADE, PRE-COVER PLACEMENT TOPOGRAPHY.

0 200 400 FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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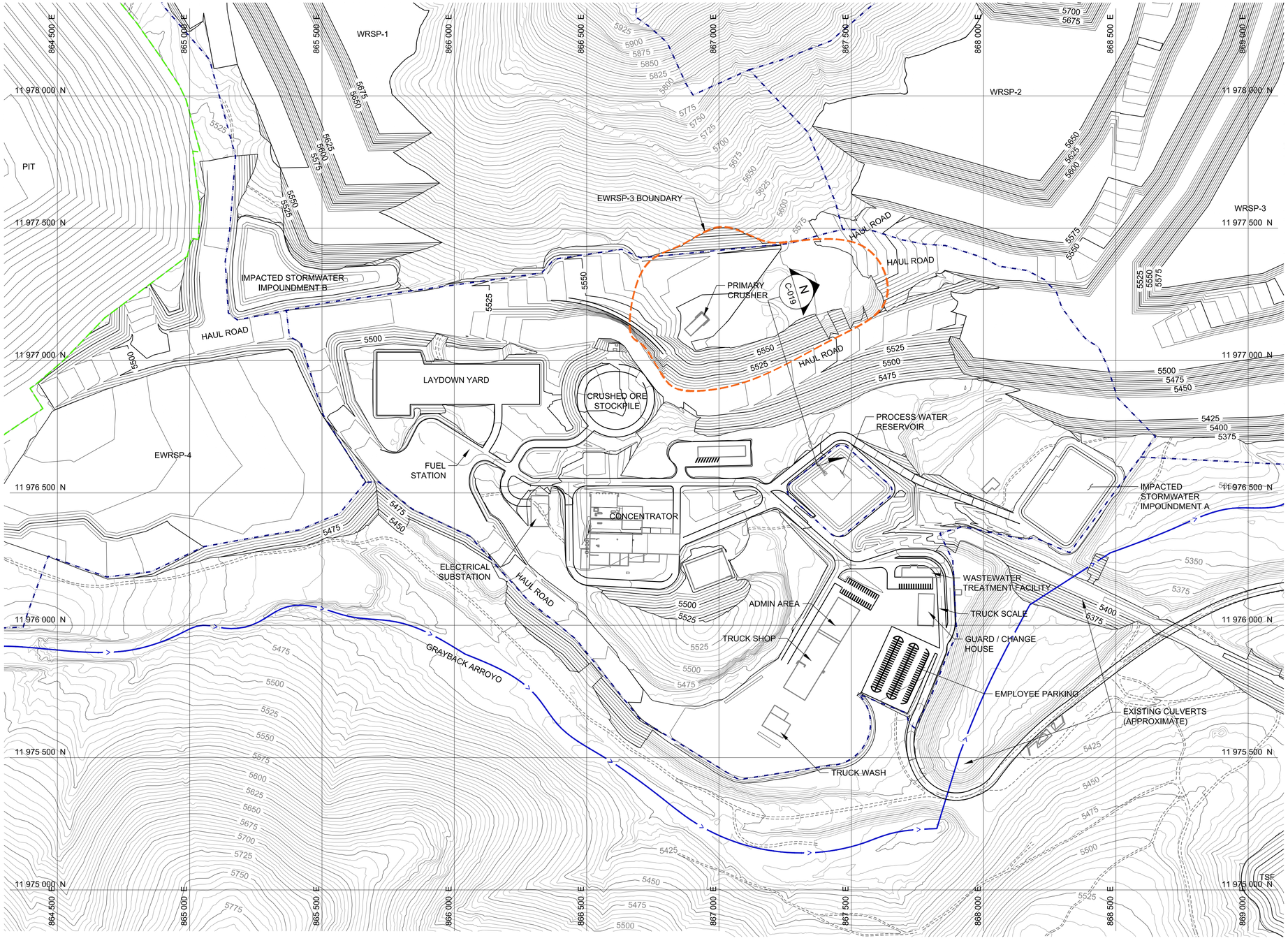
PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PERMIT

TITLE
PIT RECLAMATION AND DRAINAGE PLAN

PROJECT NO.	CONTROL	REV.	18 of 25	DRAWING
1531453	0300	C		C-014



LEGEND

- 5400 — EXISTING GROUND CONTOURS - 5 ft INTERVAL (ft-MSL)
- 5400 — PROPOSED DESIGN CONTOURS - 5 ft INTERVAL (ft-MSL) (NOTE 1)
- EXISTING FACILITY BOUNDARY (APPROXIMATE)
- PROPOSED FACILITY BOUNDARY
- WATERSHED BOUNDARY (BY OTHERS)
- EXISTING DIVERSION OR ARROYO
- EXISTING ROAD
- A / C-017 — SECTION CALLOUT: SECTION ID, DRAWING LOCATION
- WRSP — WASTE ROCK STOCKPILE
- EWRSP — EXISTING WASTE ROCK STOCKPILE

NOTES

1. FINAL BUILDOUT TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NMCC.

0 200 400 FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-02	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
PLANT AREA AT FINAL BUILDOUT

PROJECT NO.	CONTROL	REV.	DRAWING
1531453	0300	C	C-015

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

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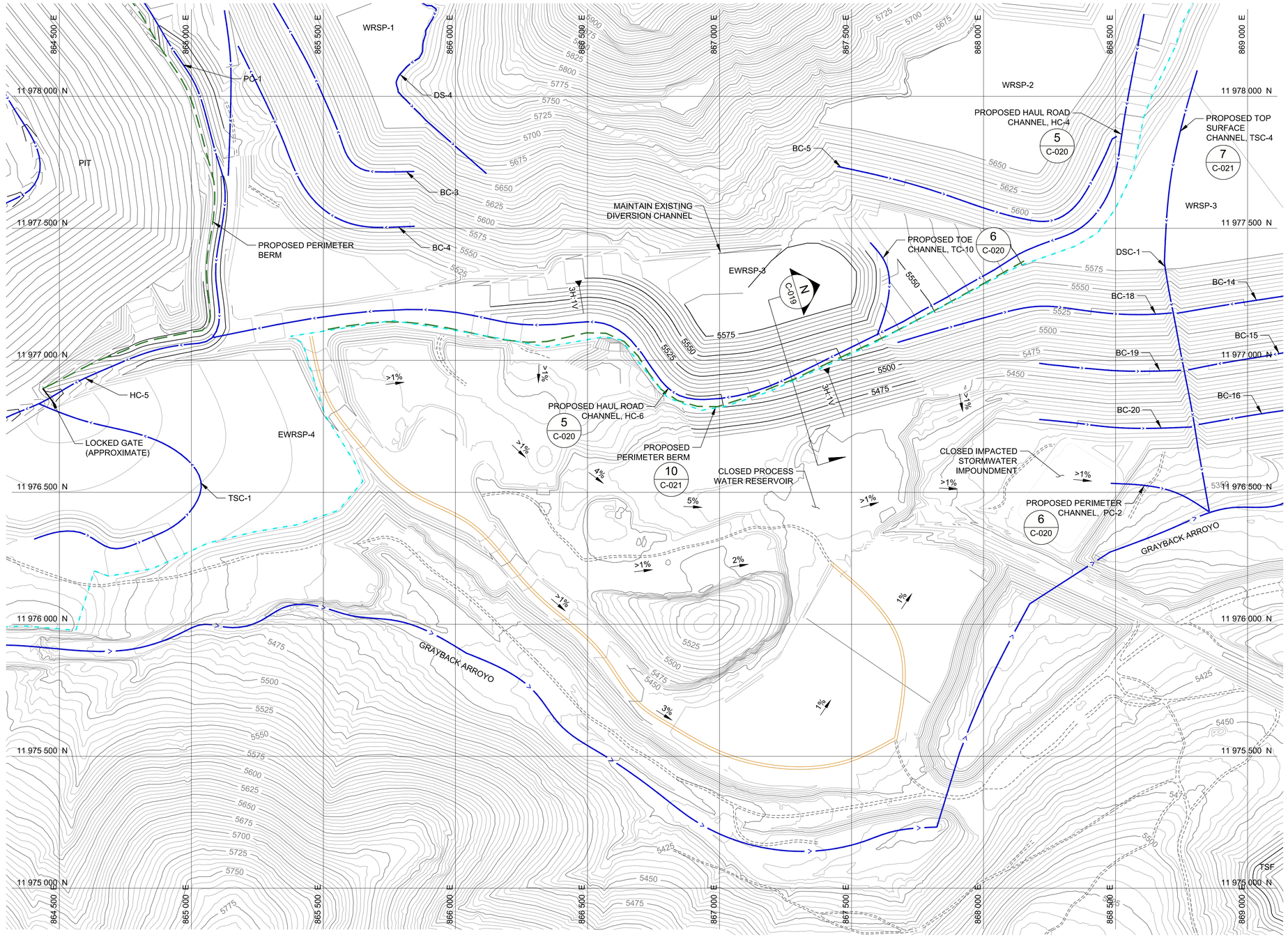

LEGEND

- 7600 — EXISTING GROUND CONTOURS - 5 ft INTERVAL (ft-MSL)
- 7580 — PROPOSED DESIGN CONTOURS - 5 ft INTERVAL (ft-MSL) (NOTE 4)
- RECLAMATION WATERSHED BOUNDARY
- EXISTING DIVERSION OR ARROYO
- PROPOSED CHANNEL CENTERLINE (APPROXIMATE)
- EXISTING ROAD
- PROPOSED ROAD
- PROPOSED PERIMETER BERM
- 3H:1V — SLOPE INDICATOR
- 1% — GRADE INDICATOR
- 1 / C-020 — DETAIL CALLOUT: DETAIL ID, DRAWING LOCATION
- A / C-017 — SECTION CALLOUT: SECTION ID, DRAWING LOCATION
- WRSP — WASTE ROCK STOCKPILE
- EWRSP — EXISTING WASTE ROCK STOCKPILE

NOTES

1. FINAL BUILDOUT TOPOGRAPHY FOR THE PIT, WRSPs, AND GMSPs WAS DEVELOPED BY OTHERS AND PROVIDED BY NMCC.
2. FINAL BUILDOUT TOPOGRAPHY FOR THE TSF WAS DEVELOPED BY GOLDER AND IS FROM THE 30K TPD TAILINGS STORAGE FACILITY FEASIBILITY DESIGN REPORT (GOLDER, 2015).
3. PLANNED HAUL ROADS WILL BE UTILIZED FOR STORMWATER CONVEYANCE TO THE PIT.
4. PROPOSED DESIGN CONTOURS REPRESENT THE RECLAMATION SUBGRADE, PRE-COVER PLACEMENT TOPOGRAPHY.

0 200 400 FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	TC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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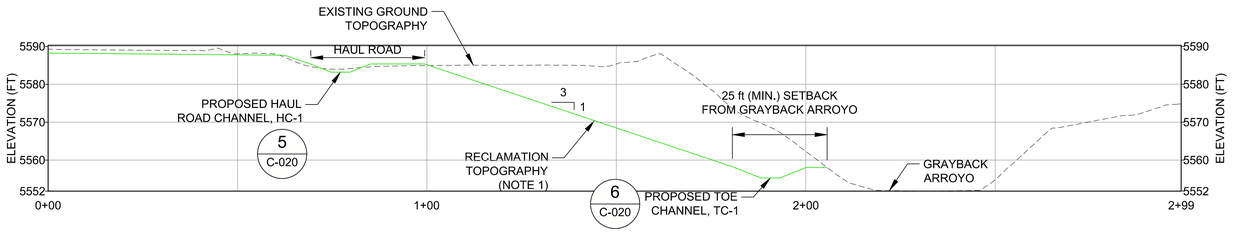
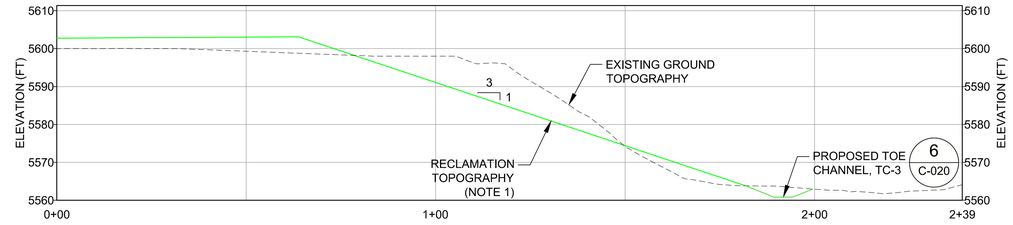
PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
PLANT AREA RECLAMATION AND DRAINAGE PLAN

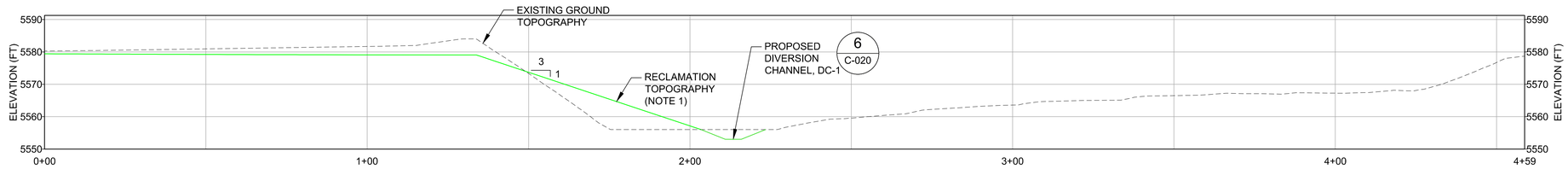
PROJECT NO.	CONTROL	REV.	20 of 25	DRAWING
1531453	0300	C		C-016



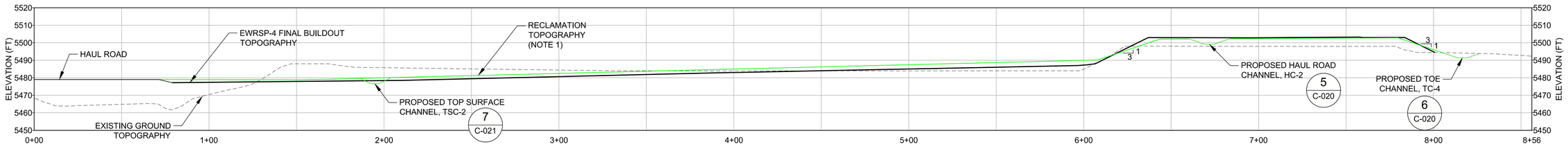
EWRSP-1 OUTSLOPE SECTION A
SCALE N.T.S. A C-017 (SEE DRAWING C-002)



EWRSP-2B OUTSLOPE SECTION C
SCALE N.T.S. C C-017 (SEE DRAWING C-004)



EWRSP-1 OUTSLOPE SECTION B
SCALE N.T.S. B C-017 (SEE DRAWING C-002)



EWRSP-4 SECTION D
SCALE N.T.S. D C-017 (SEE DRAWING C-006)

NOTES

1. PROPOSED DESIGN CONTOURS REPRESENT THE RECLAMATION SUBGRADE, PRE-COVER PLACEMENT TOPOGRAPHY.

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-15	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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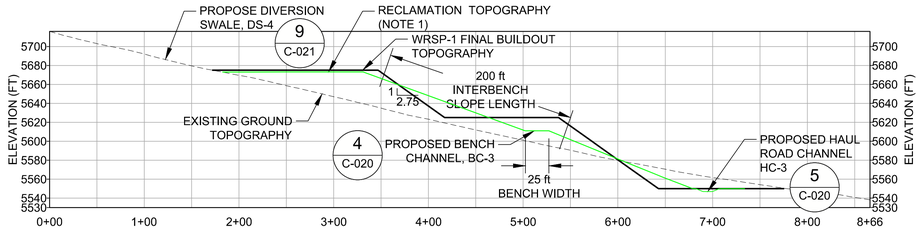
PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

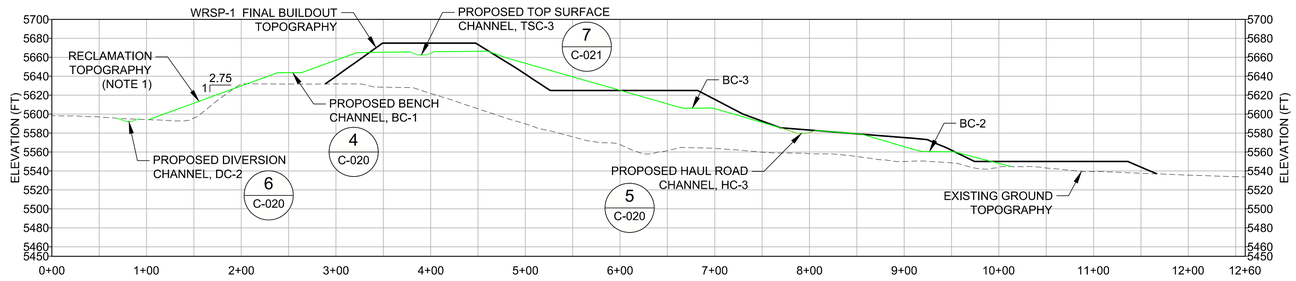
TITLE
EWRSP RECLAMATION SECTIONS

PROJECT NO.	CONTROL	REV.		DRAWING
1531453	0300	C	21 of 25	C-017



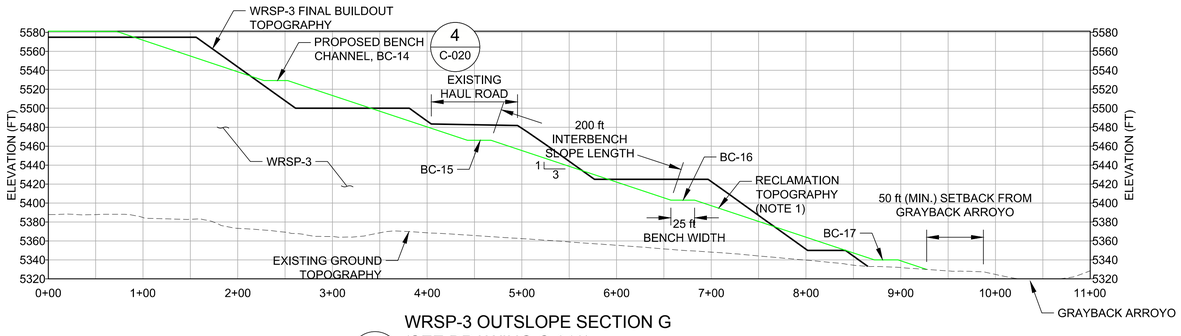
WRSP-1 OUTSLOPE SECTION E
(SEE DRAWING C-008)

SCALE N.T.S. E C-018



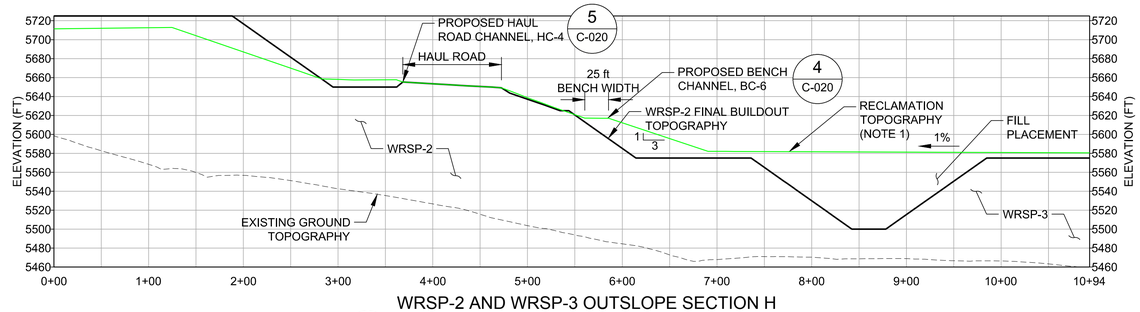
WRSP-1 SECTION F
(SEE DRAWING C-008)

SCALE N.T.S. F C-018



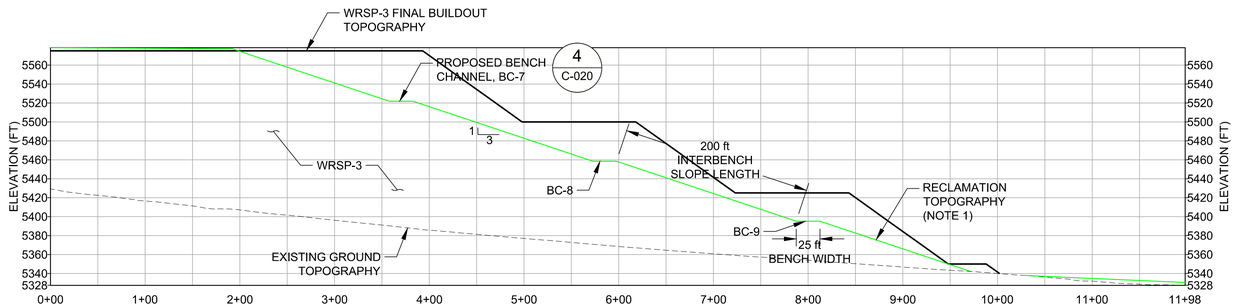
WRSP-3 OUTSLOPE SECTION G
(SEE DRAWING C-010)

SCALE N.T.S. G C-018



WRSP-2 AND WRSP-3 OUTSLOPE SECTION H
(SEE DRAWING C-010)

SCALE N.T.S. H C-018



WRSP-3 OUTSLOPE SECTION I
(SEE DRAWING C-010)

SCALE N.T.S. I C-018

NOTES

1. PROPOSED DESIGN CONTOURS REPRESENT THE RECLAMATION SUBGRADE, PRE-COVER PLACEMENT TOPOGRAPHY.

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
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A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

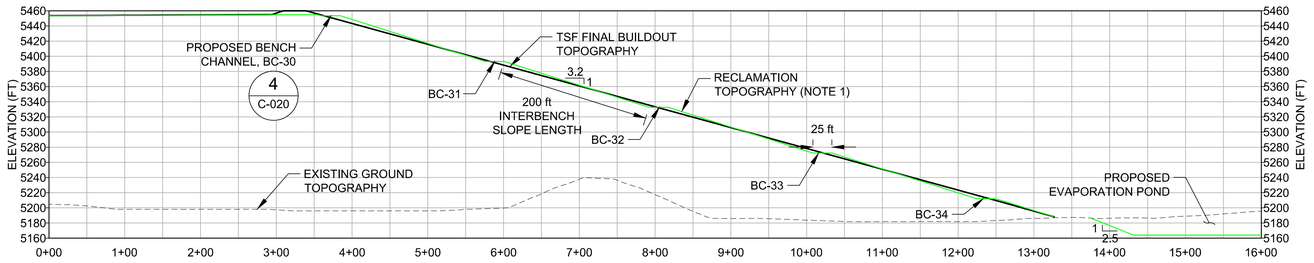
TITLE
WRSP RECLAMATION SECTIONS

PROJECT NO.	CONTROL	REV.	22 of 25	DRAWING
1531453	0300	C		C-018

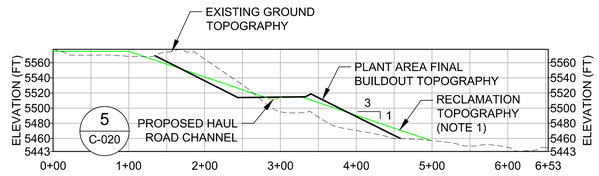
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

0 1in

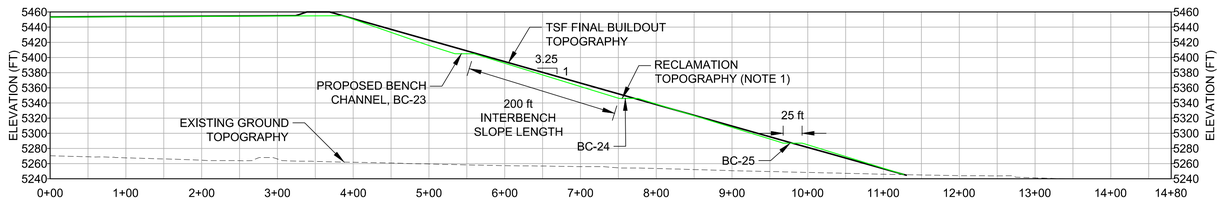
Path: \\tucson\cadd\2015 Projects\1531453\PRODUCTION\0300\ | File Name: 1531453-0300-C-018.dwg



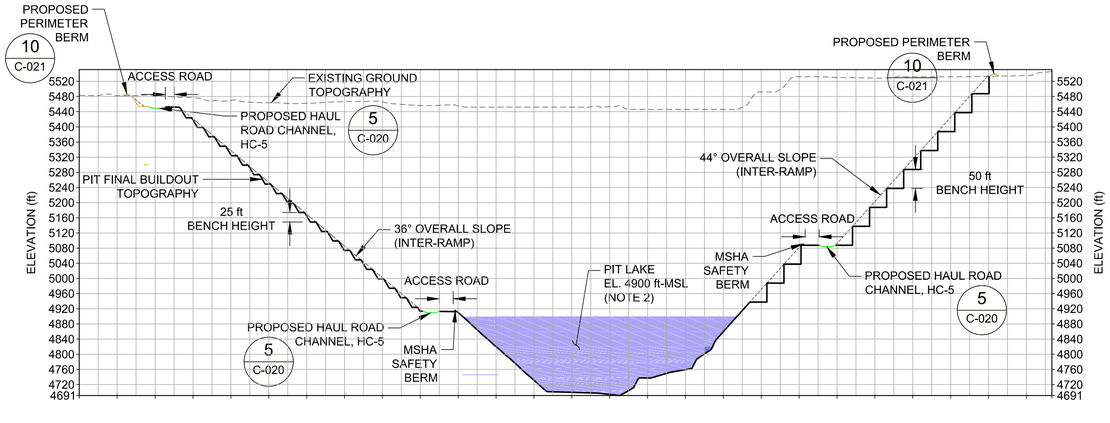
TSF OUTSLOPE SECTION J
SCALE N.T.S. J C-019
(SEE DRAWING C-012)



PLANT AREA OUTSLOPE SECTION N
SCALE N.T.S. N C-019
(SEE DRAWING C-016)



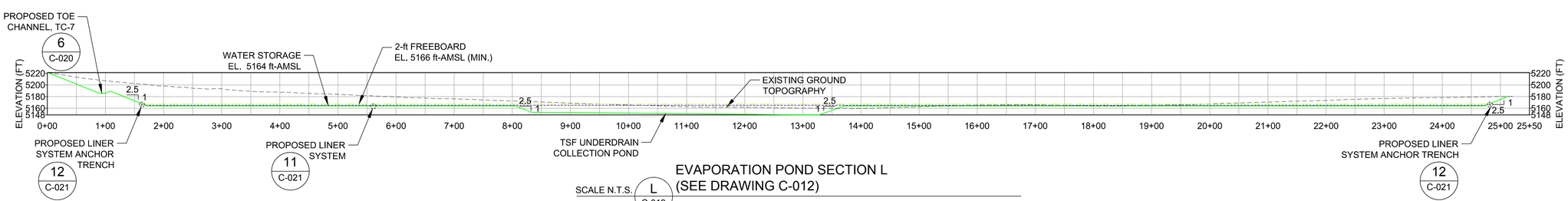
TSF OUTSLOPE SECTION K
SCALE N.T.S. K C-019
(SEE DRAWING C-012)



PIT SLOPE SECTION M
SCALE N.T.S. M C-019
(SEE DRAWING C-014)

NOTES

1. PROPOSED DESIGN CONTOURS REPRESENT THE RECLAMATION SUBGRADE, PRE-COVER PLACEMENT TOPOGRAPHY.
2. PIT LAKE ELEVATION PROVIDED BY NMCC.



EVAPORATION POND SECTION L
SCALE N.T.S. L C-019
(SEE DRAWING C-012)

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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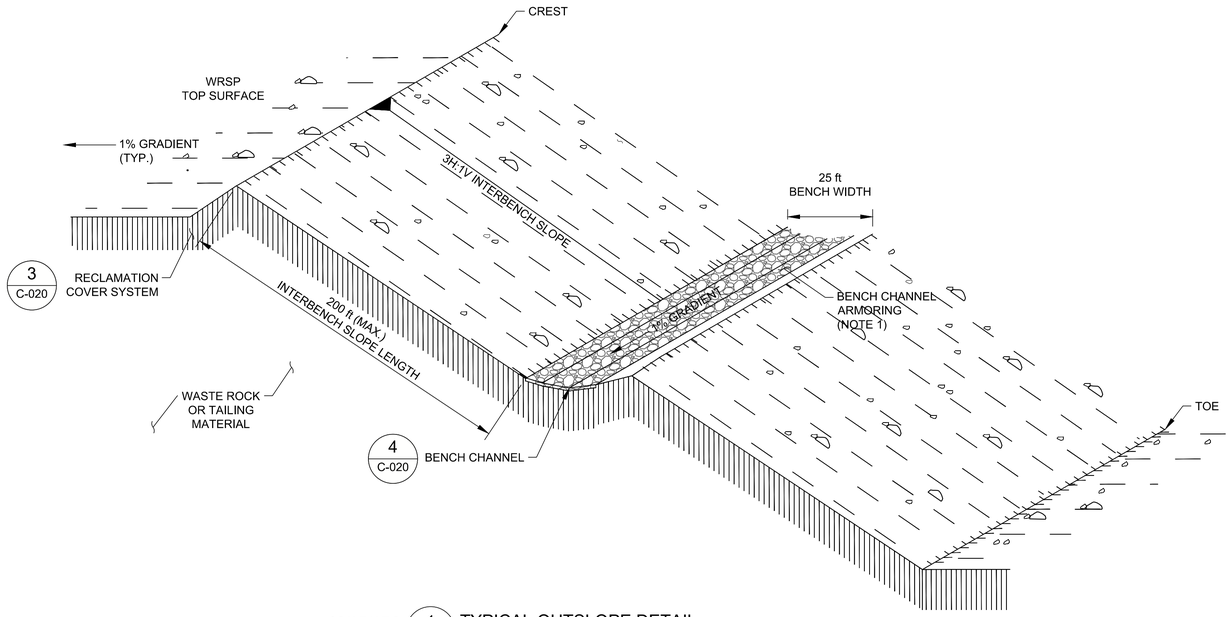
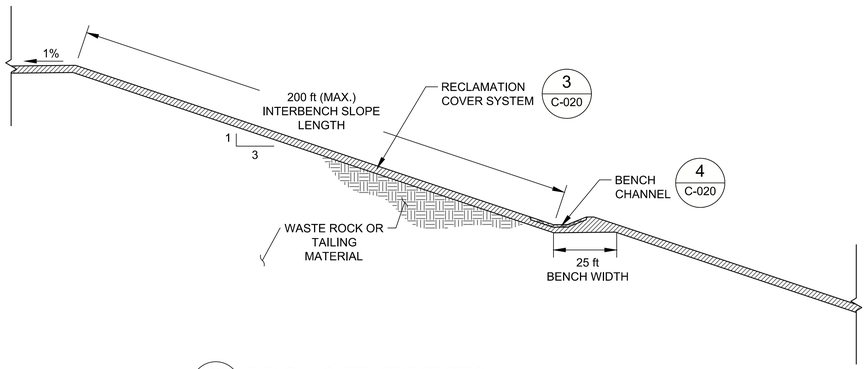
PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
TSF, PIT AND PLANT RECLAMATION SECTIONS

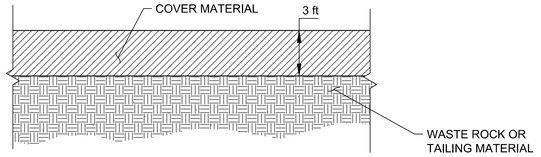
PROJECT NO.	CONTROL	REV.	23 of 25	DRAWING
1531453	0300	C		C-019



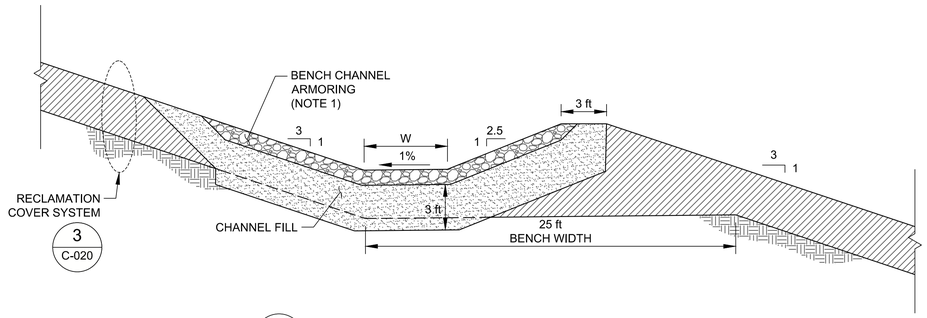
SCALE N.T.S. 1 C-020 TYPICAL OUTSLOPE DETAIL



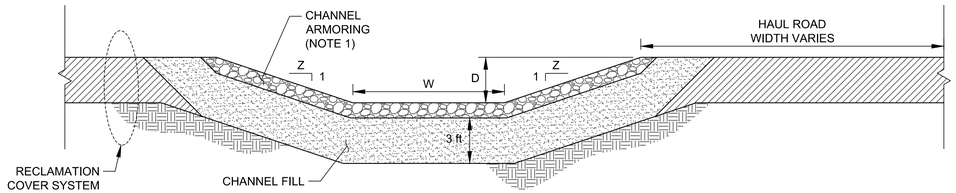
SCALE N.T.S. 2 C-020 TYPICAL OUTSLOPE SECTION



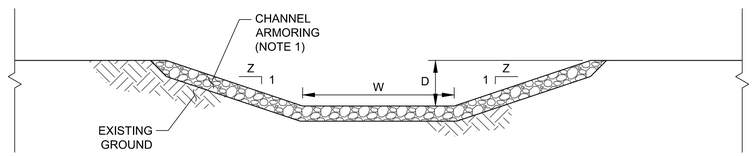
SCALE N.T.S. 3 C-020 COVER SYSTEM DETAIL



SCALE N.T.S. 4 C-020 TYPICAL BENCH CHANNEL SECTION



SCALE N.T.S. 5 C-020 TYPICAL HAUL ROAD CHANNEL SECTION



SCALE N.T.S. 6 C-020 TYPICAL DIVERSION, TOE, AND PERIMETER CHANNEL

NOTES

1. SEE CHANNEL SCHEDULE FOR DIMENSION AND ARMORING REQUIREMENTS. MINIMUM RIPRAP THICKNESS SHALL BE 2 X D_{50}. MINIMUM BEDDING THICKNESS IS 6 in.

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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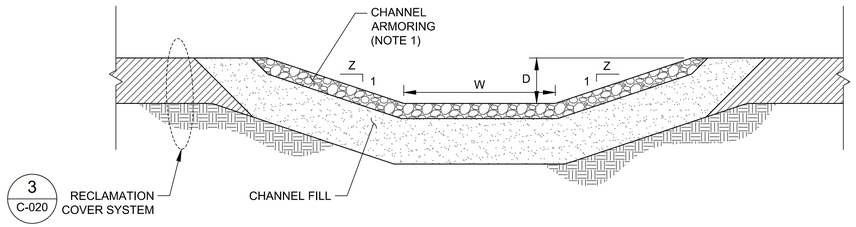
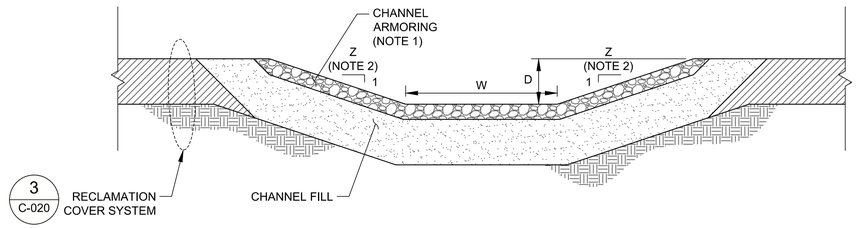
PROJECT
COPPER FLAT PROJECT
MINE RECLAMATION AND CLOSURE PLAN

TITLE
TYPICAL SECTIONS AND DETAILS (1 OF 2)

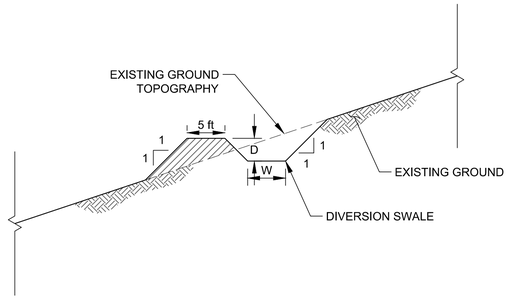
PROJECT NO.	CONTROL	REV.	24 of 25	DRAWING
1531453	0300	C		C-020



SCALE N.T.S. 7 C-021 TYPICAL TOP SURFACE CHANNEL SECTION



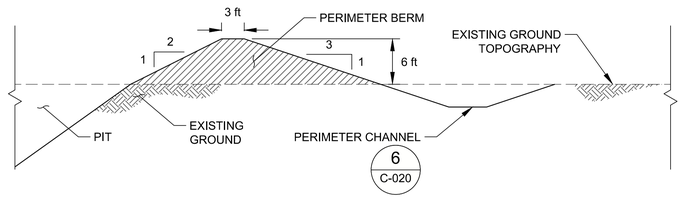
SCALE N.T.S. 8 C-021 TYPICAL DOWNSLOPE CHANNEL SECTION



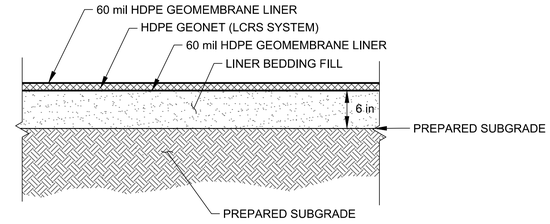
SCALE N.T.S. 9 C-021 TYPICAL DIVERSION SWALE DETAIL

NOTES

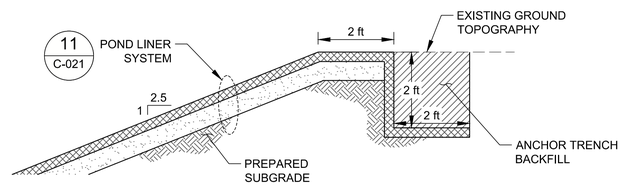
1. SEE CHANNEL SCHEDULE FOR DIMENSION AND ARMORING REQUIREMENTS. MINIMUM RIPRAP THICKNESS SHALL BE 2 X D_{50}. MINIMUM BEDDING THICKNESS IS 6 in.
2. DOWNSLOPE CHANNEL SIDESLOPES SHALL MAINTAIN A 3H:1V SLOPE PERPENDICULAR TO THE FLOW DIRECTION.



SCALE N.T.S. 10 C-021 PERIMETER BERM DETAIL



SCALE N.T.S. 11 C-021 EVAPORATION POND LINER SYSTEM



SCALE N.T.S. 12 C-021 EVAPORATION POND LINER SYSTEM ANCHOR TRENCH

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2016-10-14	ISSUED FOR AGENCY REVIEW	HNL	HNL	TS	JC
B	2016-09-09	ISSUED FOR CLIENT REVIEW	HNL	HNL	TS	TS
A	2016-09-02	ISSUED FOR INTERNAL REVIEW	HNL	HNL	TS	TS

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PROJECT
COPPER FLAT PROJECT
MINE CLOSURE AND RECLAMATION PLAN

TITLE
TYPICAL SECTIONS AND DETAILS (2 OF 2)

PROJECT NO.	CONTROL	REV.		DRAWING
1531453	0300	C	25 of 25	C-021

Date:	October 10, 2016	**Made by:**	HNL
Project No.:	1531453	**Checked by:**	TLS
Subject:	Channel Schedule	**Reviewed by:**	TLS
Project Short Title:	COPPER FLAT MORP AND MINE PERMIT APPLICATION		

CHANNEL SCHEDULE

Reach Designation[1]	Q_{design} (cfs)	Reach Design							
		Bottom Width (ft)	Bed Slope (%)	Left Side Slope (H:1V)	Right Side Slope (H:1V)	Normal Flow Depth (ft)	Average Velocity (fps)	Min. D50 (in)	Reports to
EWRSP-1									
Diversion Channel, DC-1	100.0	10	0.5	3.0	3.0	2.1	3.0	3.0	Grayback Diversion
Diversion Swale, DS-1	12.0	10	0.5	3.0	3.0	0.6	1.6	3.0	Grayback Diversion
Toe Channel, TC-1	27.0	10	3.0	3.0	3.0	0.6	3.7	3.0	Grayback Diversion
Toe Channel, TC-2	17.0	10	0.5	3.0	3.0	0.8	1.8	3.0	Grayback Diversion
Haul Road Channel, HC-1	12.9	10	10.0	3.0	3.0	0.3	4.2	6.0	Grayback Diversion
EWRSP-2B									
Top Surface Channel, TSC-1	81.2	10	1.0	3.0	3.0	0.3	1.0	3.0	Pit Perimeter Channel to Pit
Toe Channel, TC-3	125.6	10	2.9	3.0	3.0	1.5	3.6	12.0	Pit Perimeter Channel to Pit
Diversion Swale, DS-2	3.4	10	0.5	3.0	3.0	1.5	6.0	-	Pit Perimeter Channel to Pit
EWRSP-4									
Top Surface Channel, TSC-2	86.0	10	2.5	3.0	3.0	1.2	5.1	3.0	Haul Road Channel HC-2 to Pit
Haul Road Channel, HC-2	20.0	10	6.7	3.0	3.0	0.4	4.4	3.0	Pit
Toe Channel, TC-4	13.0	10	7.4	3.0	3.0	0.3	3.9	3.0	Grayback Arroyo
WRSP-1									
Diversion Swale, DS-3	27.0	10	0.5	3.0	3.0	1.0	2.0	3.0	Off Site
Diversion Swale, DS-4	69.0	10	0.5	3.0	3.0	1.7	2.7	3.0	Natural Ground to Pit
Diversion Channel, DC-2	39.0	10	0.5	3.0	3.0	1.3	2.3	3.0	Off Site
Top Surface Channel-3	32.5	10	5.6	3.0	3.0	0.6	4.9	6.0	Pit Perimeter Channel to Pit
Bench Channels, BC-1 through BC-4	97.0	10	1.0	3.0	3.0	0.4	1.7	3.0	Pit Perimeter Channel to Pit
Haul Road Channel, HC-3	97.0	10	10.3	3.0	3.0	0.9	8.6	12.0	Pit Perimeter Channel to Pit
WRSP-2 and WRSP-3									
Diversion Swale, DS-5	112.0	10	0.5	3.0	3.0	2.2	3.1	3.0	Natural Ground to Pit
Diversion Swale, DS-6	52.0	10	0.5	3.0	3.0	1.5	2.5	3.0	Off Site
Diversion Swale, DS-7	26.0	10	0.5	3.0	3.0	1.0	2.0	3.0	Off Site
Haul Road Channel, HC-4	63.9	10	9.6	3.0	3.0	0.7	7.3	12.0	Pit
Top Surface Channel, TSC-4	42.0	10	1.0	3.0	3.0	1.1	3.0	3.0	Grayback Arroyo
Top Surface Channel, TSC-5	100.0	10	1.0	3.0	3.0	1.7	3.8	18.0	Grayback Arroyo
Downslope Channel, DSC-1	127.1	20	29.0	3.0	3.0	0.3	22.0	ACB	Grayback Arroyo
Downslope Channel, DSC-2	240.1	20	30.2	3.0	3.0	0.4	28.4	ACB	Grayback Arroyo
Toe Channel, TC-5	229.8	10	13.0	3.0	3.0	1.0	10.1	3.0	Grayback Arroyo
Toe Channel, TC-6	242.9	10	8.6	3.0	3.0	1.6	10.7	18.0	Grayback Arroyo
Bench Channels, BC-5 through BC-20	39.0	10	1.0	3.0	3.0	1.0	2.9	3.0	WRSP-2 to Pit, WRSP-3 to Grayback Arroyo
TSF									
Downslope Channel, DSC-3	181.8	20	27.6	3.0	3.0	0.4	24.9	ACB	Off Site
Downslope Channel, DSC-4	165.6	20	27.8	3.0	3.0	0.3	24.0	ACB	Grayback Arroyo
Downslope Channel, DSC-5	478.0	20	29.0	3.0	3.0	0.6	36.1	ACB	Grayback Arroyo
Top Surface Channel, TSC-6	243.0	10	0.5	3.0	3.0	2.8	3.7	3.0	DSC-5 to Grayback Arroyo
Top Surface Channel, TSC-7	236.4	10	0.5	3.0	3.0	2.8	3.7	3.0	DSC-5 to Grayback Arroyo
Bench Channels, BC-21 through BC-42	38.0	10	1.0	3.0	3.0	1.0	2.8	3.0	Off Site or Grayback Arroyo
Toe Channel, TC-7	487.7	15	0.5	3.0	3.0	4.0	4.5	3.0	Off Site
Toe Channel, TC-8	213.2	10	0.5	3.0	3.0	3.0	3.7	3.0	Grayback Arroyo
Toe Channel, TC-9	192.5	10	3.5	3.0	3.0	1.7	7.3	12.0	Grayback Arroyo
PLANT									
Perimeter Channel, PC-2	200.0	10	1.0	3.0	3.0	2.5	4.7	3.0	Grayback Arroyo
Toe Channel, TC-10	36.0	10	1.0	3.0	3.0	1.0	2.8	3.0	Pit
PIT									
Perimeter Channel, PC-1	294.0	10	2.0	3.0	3.0	2.5	6.7	3.0	Pit
Haul Road Channel, HC-5	984.4	10	10.0	3.0	3.0	1.8	36.7	ACB	Pit

Notes:
1 - See Mine Reclamation and Closure Plan drawing set for location of specific reach. Hydrolgy and Hydraulics calculation packet available upon request.
ACB - Articulated concrete block.
cfs - Cubic feet per second
ft - Feet
fps - Feet per second
in - Inch
Qdesign - Design flows for channel determined from Hydrologic Modeling System (HEC-HMS) developed by the Hydrologic Engineering Center within the U.S. Army Corps of Engineers.
Min. D50 - median diameter or the medium value of the particle size distribution
Rip Rap size calculations based on the following criteria: U.S. Army Corps of Engineers (USACE, 1994) mild slope, <2% slopes; USACE steep slope, >2% to <20% slopes; Robinson method (1997), >20% to ,40% slopes; ACB for all downslope channels.

ATTACHMENT E2
TSF CLOSURE WATER MANAGEMENT PROGRAM