WOLVERINE MINE

GENERAL SITE PLAN

VERSION 2011-05

QUARTZ MINING LICENSE QML-0006

Prepared by

Yukon Zinc Corporation

August 22nd, 2011

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1 Background Information

This General Site Plan, Version 2011-05, (GSP V2011-05) updates *Wolverine Project General Site Plan, Version 2008-04* (GSP 2008-04) submitted by Yukon Zinc Corporation (YZC) and approved by Yukon Government Energy, Mines and Resources (EMR) in February 2009. It supersedes versions V2006-02, V2007-03 and V2008-04.

GSP V2011-05 contains or incorporates the following updated information for the Wolverine Mine:

- Overall project layout showing existing and future mine infrastructure.
- YZC and Wolverine Project mining claims and a summary of mining use by project mining claim.
- A summary of approved Environmental Protection and Mine Operating Plans.
- Conceptual plans for additional construction activities to be completed 2011 to 2013.
- Addendums submitted to GSP 2008-04 in 2009 to mid 2011, including mill bypass road construction (March 2009), camp capacity increase to 246 persons (October 2009), airstrip stopway extension (August 2010), and life of mine quarries at access road km 11 (June 2011) and km 19 (July 2011).

GSP V2011-05 is supported by as-constructed reports submitted as per Quartz Mining Licence QML-0006 and Type A Water Licence QZ04-065 including:

- *Wolverine Project Starter Tailings Storage Facility – 2009 Civil Works Construction Summary Report (May 12, 2010)*
- *Wolverine Mine Industrial Complex As-Constructed Report and Drawings (April 5, 2011),* and documents referred to within
- *Wolverine Project - 2010 Civil Works Addendum to Starter Tailings Storage Facility – 2009 Civil Works Construction Summary Report (May 4, 2011)*

In addition, GSP V2011-05 is supported by *Wolverine Project Reclamation and Closure Plan V2009-03*, and several Environmental Protection Plans and Operating Plans (see Section 2).

1.1 Corporate Update

YZC is a mining, exploration and development company with mining reserves and resources in the Finlayson and Rancheria Districts of the Yukon Territory. In spring 2011, shareholders Jinduicheng Molybdenum Group Ltd and Northwest Nonferrous International Investment Company Ltd. (JXC) were joined by four additional shareholders including Fosun Gold Holdings Limited, Arich Investments Ltd., Silvercorp Metals Inc., and Northern Mineral Investment Corporation.

Yukon Zinc has been active in the southeast Yukon region for over 10 years and has taken the Wolverine Mine from exploration through development into operation. The key priorities for YZC are to ramp up production at the Wolverine Mine and to focus on strategic growth opportunities.

1.2 Environmental Commitment

Protection of the environment continues to be a priority for YZC. Through the implementation of environmental policies as well as Environmental Protection and Mine Operating Plans developed in accordance with QML-0006, YZC strives to preserve and protect the environment while providing a

safe and responsible operating environment. YZC is committed to managing its business in a way that will contribute to and achieve a high level of environmental performance, and meet the goal of continuous improvement.

Examples of YZC's commitment to the environment are the use of innovative energy and water saving initiatives incorporated into infrastructure design and operations including:

- Recycling of water contained within the tailings facility for use in mineral processing.
- Recycling of water for use in the shotcrete plant.
- Recycling of wash water in the truck shop through use of an oil/water separator.
- Generator waste heat usage through a closed loop glycol recirculation system.
- Burning of waste oil generated onsite to heat the truck shop (also minimizes transportation requirements for disposal offsite).

1.3 Wolverine Mine Location and Development Summary

The Wolverine Mine, located in the southeast Yukon within Kaska Traditional Territory (Figure 1-1), is a zinc-silver-copper-lead-gold underground mine capable of processing up to 1,700 t of diluted ore per day.

Mine construction occurred from 2009-2010, with commissioning of the mill in late 2010. As defined by QML-0006, the official date of operations start-up was July 17th, 2011. Commercial production is expected in early 2012, with operations continuing for approximately ten years, and followed by a three-year closure phase as described in the *Wolverine Project Reclamation and Closure Plan V2009-03*.

Figure 1-1: Location of Yukon Zinc Corporation's Wolverine Project.

2 Wolverine Mine Operations

Since the issuance of GSP V2008-04, all QML-0006 required Environmental Protection Plans (EPPs) and Mine Operating Plans (MOPs) have been approved by Yukon Energy, Mines and Resources as summarized in Table 2-1. The EPPs and MOPs document practices and procedures required to monitor, minimize or eliminate potential safety risks, and environmental and socio-economic impacts throughout mine work areas, activities and operations. Each Plan is a living document to guide site management and personnel to ensure that commitments are achieved. The EPPs also provide environmental regulators, stakeholders and First Nations with a reference for monitoring compliance and a mechanism for making suggestions for improvements. All Plans have been structured so that they can be updated, if required, as mining progresses.

Table 2-1: Wolverine Mine Environmental Protection and Operating Plans

Environmental Protection Plans	EMR Approval
Waste Management Plan V2010-03	March 25, 2011
Monitoring and Surveillance Plan V2010-02	June 4, 2010
Spill Contingency Plan V2010-03	March 25, 2011
Wildlife Protection Plan V2009-01	May 13, 2009
Heritage Resource Protection Plan V2007-01	Dec. 11, 2007

Mine Operating Plans	EMR Approval
Mill Operating Plan V2010-02	June 4, 2010
Mine Development & Operation Plan V2010-02, followed by submissions: - Section 5 Addendum (Dec 29, 2010) - Ground Control Management Plan (March 31, 2010)	August 9,2010
Tailings and Related Infrastructure Design and Construction Plan V2009-02	March 20, 2009
Tailings Facility Operation, Maintenance and Surveillance Manual V2010-01	August 12, 2010

2.1 Governing Licences and Permits

The Wolverine Mine operates according to the major and minor permits and licences summarized in Table 2-2, as well as numerous building permits issued by Yukon Community Services.

Table 2-2: Permits and Licences Issued for Wolverine Mine Operations

Permits Issued	Issuing Dept./Board	Purpose	Date of Receipt	Expiry
Mining Land Use Permit LQ00140	Yukon Energy, Mines and Resources (EMR)	To establish and use exploration site roads/ trails and camp, and temporary waste rock pad.	Jan. 18, 2005	Jan. 17, 2015
Type B Water Licence QZ01-051	Yukon Water Board (YWB)	To use water at the exploration camp and for drilling; deposit wastes in the waste rock pad.	April 4, 2005	Jan. 11, 2015
Quartz Mining License QML-0006	EMR	For project development, operation, and closure activities.	Dec. 5, 2006	Dec. 1, 2021
Type A Water Licence QZ04-065	YWB & Yukon Executive Council Office	To use water, deposit wastes, and modify the bed and bank of a watercourse for the purposes of mining and milling.	Oct. 4, 2007	Dec. 31, 2027
Explosives Storage Permits YT460, YT461, YT462	Yukon Workers' Compensation Health and Safety Board	Compliance with the Occupational Health and Safety Act and Regulations	Dec. 5, 2007	Dec. 5, 2012
Land Treatment Facility Permit #4202-24-022	Yukon Environment	To operate a land treatment facility for the bioremediation of hydrocarbon contaminated soil	July 19, 2010	Dec. 31, 2012
Environment Act Permit #4201-81-014	Yukon Environment	To operate a landfill, incinerator, and waste oil burner, and to open burn wastes; To generate, store and handle special wastes.	Jan. 17, 2011	Dec. 31, 2011
Nuclear Substance and Radiation Device Licence No. 14371-1-12.0	Canadian Nuclear Safety Commission	Possess, transfer, use and store radiation device and conduct licensed activities	June 18, 2010	May 31, 2012

2.2 Mine Site Infrastructure

The mine site infrastructure described herein are located on claims owned by YZC, with the exception of the Money Claims, which are subject to an Option Agreement with YGC Resources Ltd. Figure 2-1 shows the project claims for the Wolverine Mine from the exploration camp on Wolverine Lake to the Robert Campbell Highway, as well as other YZC claims, mineral claims held by others, and surrounding Kaska held R-blocks.

Figure 2-2 contains the overall site layout with mining claims for the mine site from the industrial complex to the tailings facility. Figure 2-3 shows the general arrangement for existing (in blue) and future (in gray) infrastructure within the industrial complex.

Table 2-3 provides a summary of the claims for the Wolverine Mine with corresponding use including buildings, mine access and site roads, airstrip, the exploration and permanent camps, explosive and cap magazines, waste rock storage pads, freshwater wells, organic stockpile locations, waste management areas and facilities, quarries in use for life-of mine, laydown areas, and tailings facility infrastructure.

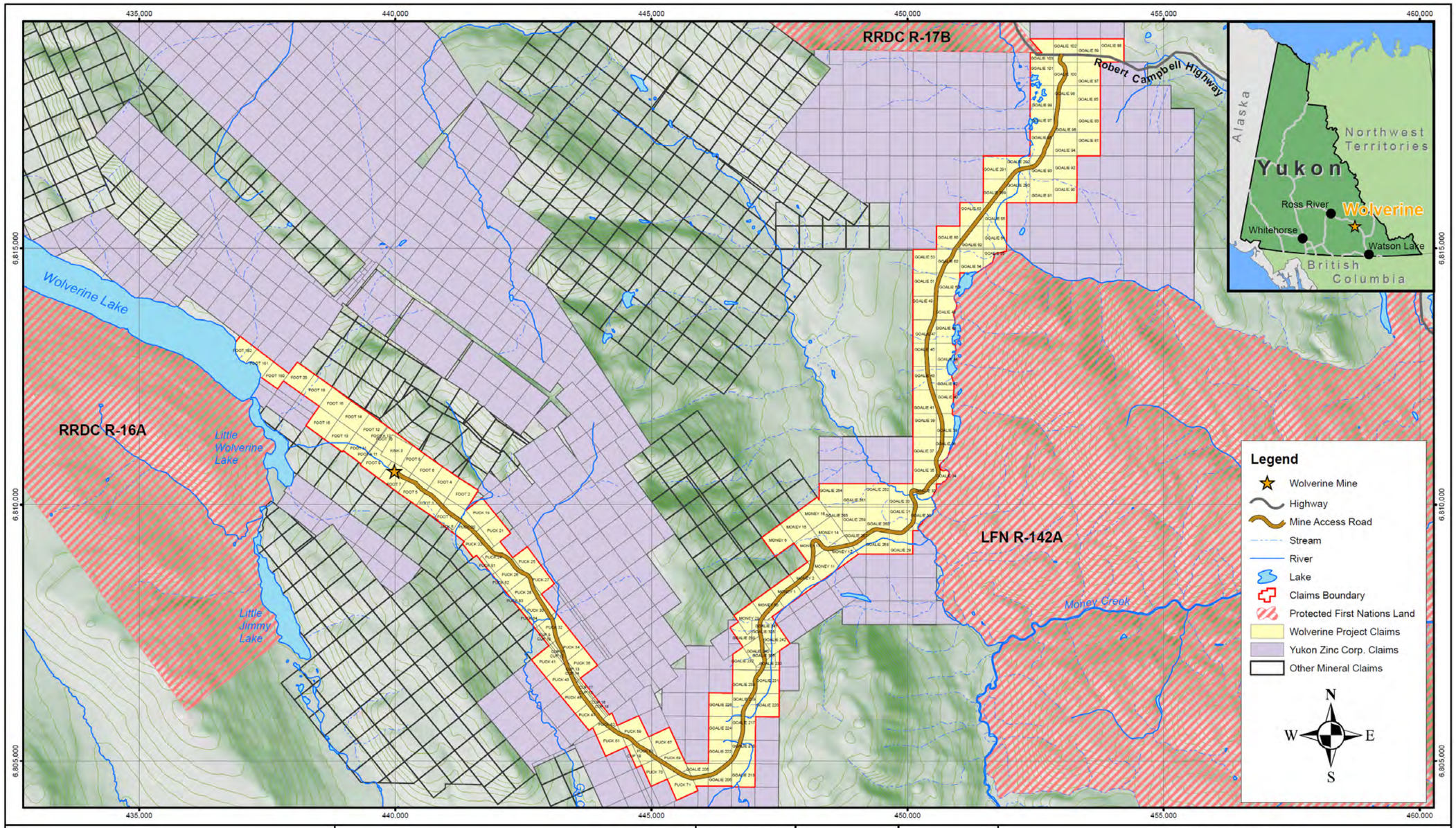


Figure 2-1: Map of Wolverine Project Claims and Surrounding Area

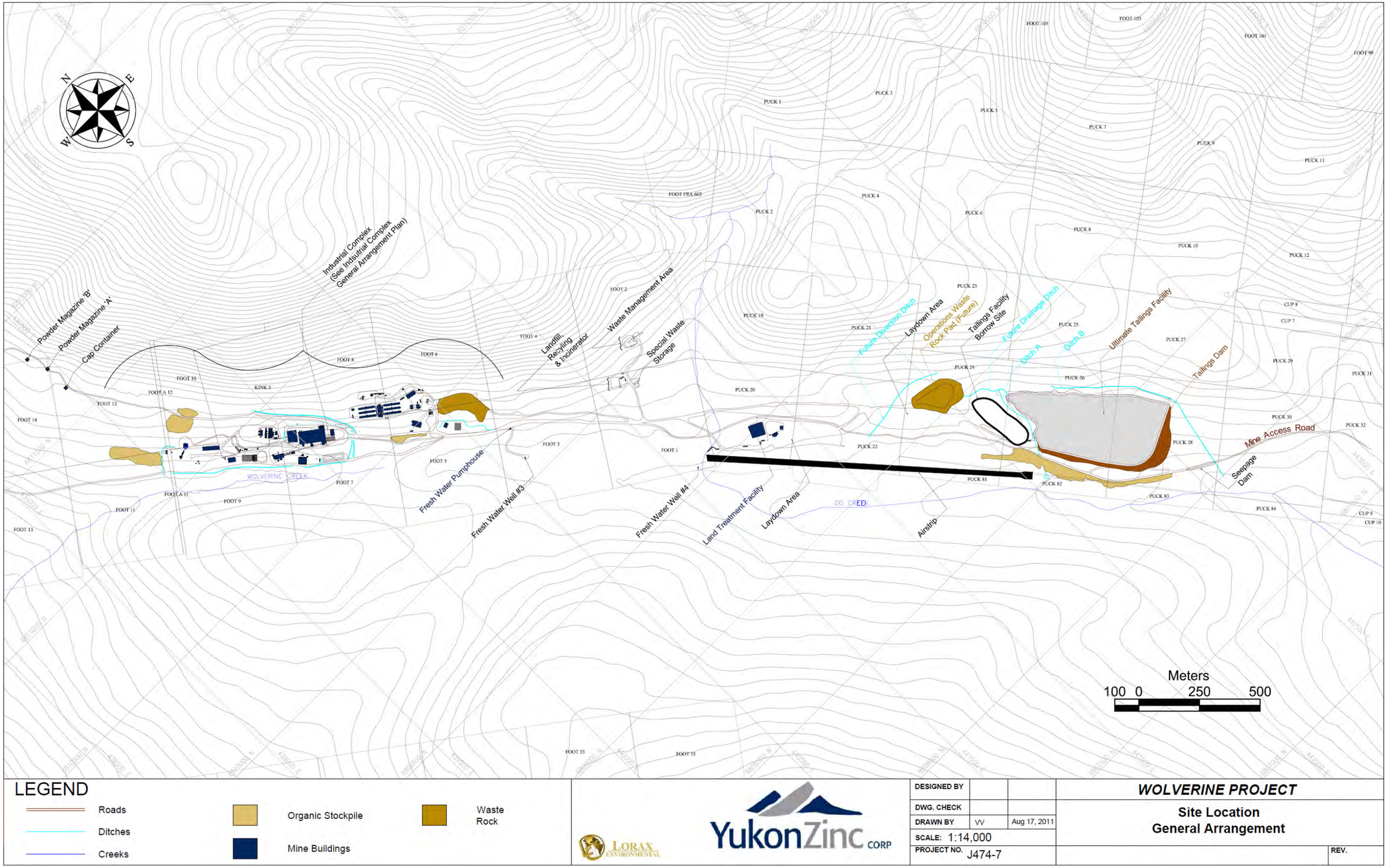


Figure 2-2: Wolverine Mine Infrastructure General Arrangement with Mineral Claims

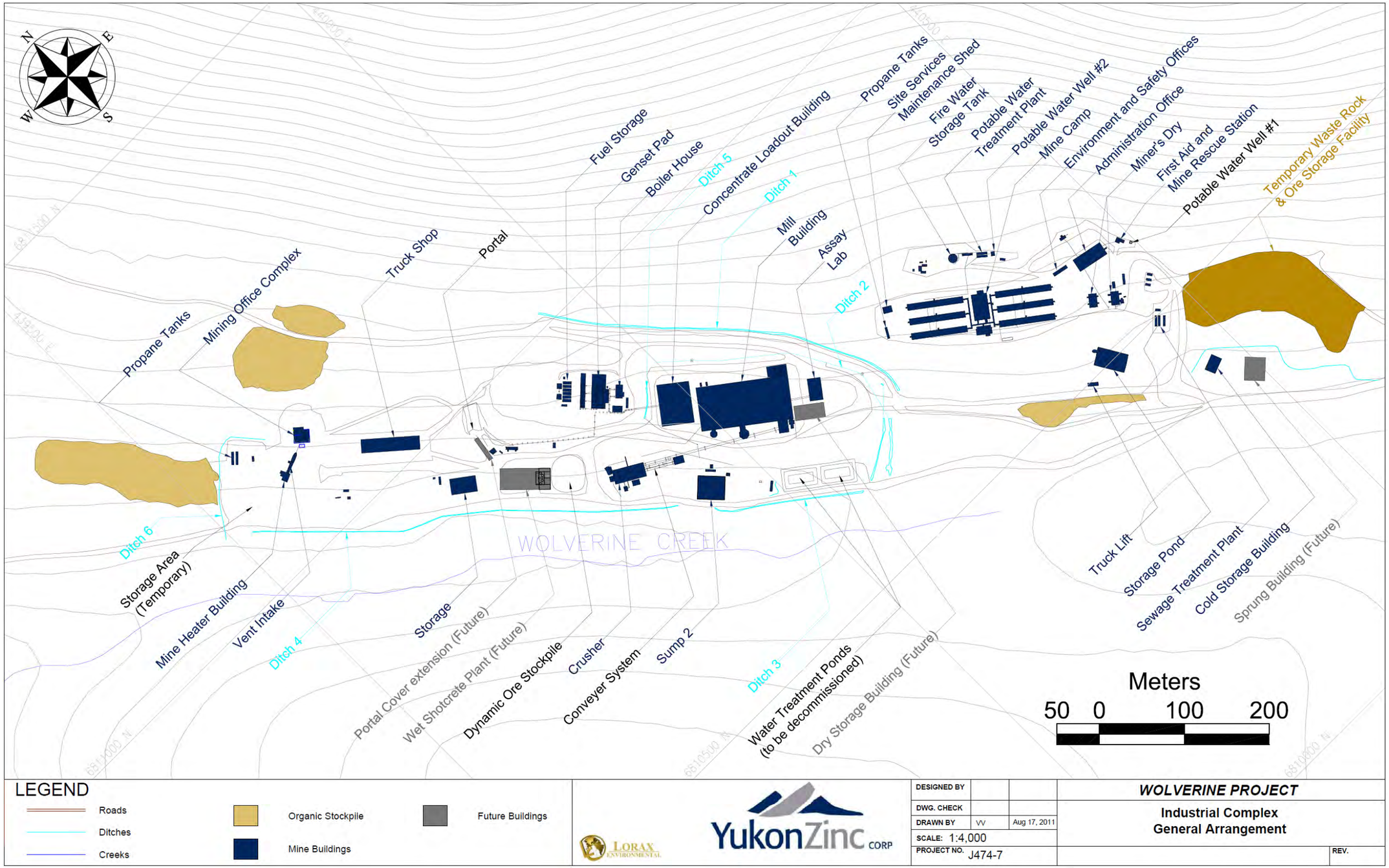


Figure 2-3: Wolverine Mine Industrial Complex Infrastructure General Arrangement

Table 2-3: Wolverine Mine Claims List and Use

Grant No.	Claim Name	Claim No.	Wolverine Mine Infrastructure
YB87703	CUP	9	access road
YB87704	CUP	10	access road
YB87705	CUP	11	access road
YB87706	CUP	12	access road
YB87707	CUP	13	access road
YB87708	CUP	14	access road
YB87709	CUP	15	access road
YB87710	CUP	16	access road
YB87711	CUP	17	access road
YB87712	CUP	18	access road
YB87713	CUP	19	access road
YB45954	FOOT	1	site and access roads; special waste storage; landfill/recycling and incinerator; freshwater back-up well; pipelines
YB45955	FOOT	2	site and access roads; waste management area
YB45956	FOOT	3	site and access roads; freshwater well and pumphouse; pipelines
YB45957	FOOT	4	site roads
YB45958	FOOT	5	temporary waste rock pad; cold storage building; container laydown area; pipelines; organic stockpile; sewage treatment plant; emergency use pond; truck lift; site and access roads; diversion ditch
YB45959	FOOT	6	potable water wells; camp; offices; dries; first aid station; mine rescue station; temporary waste rock pad; laydown area; site roads
YB45960	FOOT	7	Sump #1 & #2; water treatment ponds; concentrate load-out building; crusher; conveyor system; mill building; assay lab; dry storage building; diversion and collection ditches; site roads; pipelines
YB45961	FOOT	8	potable water treatment plant; fire water storage tank; camp; maintenance shed; propane tanks; site roads; diversion and collection ditches; pipelines
YB45962	FOOT	9	mining office complex; mine heater building; vent raise; truck shop; collection ditch; storage area; wet shotcrete plant; dynamic ore stockpile; crusher; site roads; pipelines
YB45963	FOOT	10	truck shop; organic stockpile; site roads; mining office complex; vent raise; laydown area
YB51608	FOOT	11	site roads; diversion ditch; propane tanks; organic stockpile

Grant No.	Claim Name	Claim No.	Wolverine Mine Infrastructure
YB71274	FOOT	A11	collection ditch; propane tanks; site roads
YB51609	FOOT	12	organic stockpile; site roads; cap container; powder magazine A; diversion ditch
YB71275	FOOT	A12	diversion ditch; site roads; organic stockpile; propane tanks
YB45966	FOOT	13	site roads
YB45967	FOOT	14	powder magazine A and B; site roads
YB45968	FOOT	15	site roads
YB45969	FOOT	16	site roads
YB45971	FOOT	18	site roads
YB45973	FOOT	20	site roads
YB59982	FOOT	180	site roads
YB59983	FOOT	181	exploration camp, site roads
YB59984	FOOT	182	exploration camp, site roads
YC25006	GOALIE	29	access road
YC25007	GOALIE	30	access road
YC25008	GOALIE	31	access road, life of mine quarry
YC25009	GOALIE	32	access road
YC25010	GOALIE	33	access road
YC25011	GOALIE	34	access road
YC25012	GOALIE	35	access road
YC25013	GOALIE	36	access road
YC25014	GOALIE	37	access road
YC25015	GOALIE	38	access road
YC25016	GOALIE	39	access road
YC25017	GOALIE	40	access road
YC25018	GOALIE	41	access road
YC25019	GOALIE	42	access road
YC25020	GOALIE	43	access road
YC25021	GOALIE	44	access road
YC25022	GOALIE	45	access road
YC25023	GOALIE	46	access road

Grant No.	Claim Name	Claim No.	Wolverine Mine Infrastructure
YC25024	GOALIE	47	access road
YC25025	GOALIE	48	access road
YC25026	GOALIE	49	access road
YC25027	GOALIE	50	access road
YC25028	GOALIE	51	access road
YC25029	GOALIE	52	access road
YC25030	GOALIE	53	access road
YC25031	GOALIE	54	access road
YC25032	GOALIE	55	access road
YC25037	GOALIE	60	access road
YC25039	GOALIE	62	access road
YC25040	GOALIE	63	access road
YC25041	GOALIE	64	access road
YC25042	GOALIE	65	access road
YC25058	GOALIE	81	access road
YC25060	GOALIE	83	access road
YC25062	GOALIE	85	access road
YC25064	GOALIE	87	access road
YC25065	GOALIE	88	access road
YC25066	GOALIE	89	access road
YC25067	GOALIE	90	access road
YC25068	GOALIE	91	access road
YC25069	GOALIE	92	access road
YC25070	GOALIE	93	access road
YC25071	GOALIE	94	access road
YC25072	GOALIE	95	access road
YC25073	GOALIE	96	access road
YC25074	GOALIE	97	access road
YC25075	GOALIE	98	access road
YC25076	GOALIE	99	access road

Grant No.	Claim Name	Claim No.	Wolverine Mine Infrastructure
YC25077	GOALIE	100	access road
YC25078	GOALIE	101	access road
YC25079	GOALIE	102	access road
YC25080	GOALIE	103	access road
YC25182	GOALIE	205	access road; life of mine quarry
YC25183	GOALIE	206	access road
YC25299	GOALIE	213	access road
YC25301	GOALIE	215	access road
YC25303	GOALIE	217	access road
YC25305	GOALIE	219	access road
YC25306	GOALIE	220	access road
YC25308	GOALIE	222	access road
YC25310	GOALIE	224	access road
YC25312	GOALIE	226	access road
YC25316	GOALIE	230	access road
YC25317	GOALIE	231	access road
YC25318	GOALIE	232	access road
YC25319	GOALIE	233	access road
YC25325	GOALIE	239	access road
YC25326	GOALIE	240	access road
YC25327	GOALIE	241	access road
YC25328	GOALIE	242	access road
YC25343	GOALIE	257	access road
YC25344	GOALIE	258	access road
YC25345	GOALIE	259	access road
YC25346	GOALIE	260	access road
YC25347	GOALIE	261	access road
YC25348	GOALIE	262	access road
YC25349	GOALIE	263	access road
YC25350	GOALIE	264	access road

Grant No.	Claim Name	Claim No.	Wolverine Mine Infrastructure
YC29140	GOALIE	289	access road
YC29141	GOALIE	290	access road
YC29142	GOALIE	291	access road
YC29143	GOALIE	292	access road
YC29439	GOALIE	305	access road
YC29440	GOALIE	306	access road
YA69009	KINK	3	mine portal; pipelines; site roads; fuel storage; genset pad; boiler house; diversion and collection ditches; concentrate load-out building; mill building
YB16726	MONEY	1	access road
YB16727	MONEY	2	access road
YB16731	MONEY	6	access road
YB16736	MONEY	11	access road
YB16737	MONEY	12	access road
YB16738	MONEY	13	access road
YB16739	MONEY	14	access road
YB16740	MONEY	15	access road
YB16741	MONEY	16	access road
YB51934	MONEY	29	access road
YB51935	MONEY	30	access road
YB55997	PUCK	19	site road
YB55998	PUCK	20	airstrip; access and site roads; land treatment facility; laydown area; pipelines
YB55999	PUCK	21	site road
YB56000	PUCK	22	airstrip; laydown area; site roads; access road; pipelines; operations waste rock stockpile diversion ditch
YB56002	PUCK	24	access road; tailings facility; organic stockpile; laydown area; pipelines; operations waste rock stockpile, diversion ditch and drainage ditch; tailings facility borrow area
YB56003	PUCK	25	site road
YB56004	PUCK	26	access road; tailings facility; organic stockpile; airstrip; pipelines; operations waste rock drainage ditch; tailings facility borrow area
YB56005	PUCK	27	site road

Grant No.	Claim Name	Claim No.	Wolverine Mine Infrastructure
YB56006	PUCK	28	access road; tailings facility; organic stockpile; pipelines
YB56008	PUCK	30	access road; tailings facility
YB56010	PUCK	32	access road
YB56012	PUCK	34	access road
YB56014	PUCK	36	access road
YB56019	PUCK	41	access road
YB56021	PUCK	43	access road
YB56023	PUCK	45	access road
YB56025	PUCK	47	access road
YB56037	PUCK	59	access road
YB56039	PUCK	61	access road
YB56040	PUCK	62	access road
YB56045	PUCK	67	access road
YB56046	PUCK	68	access road
YB56047	PUCK	69	access road; life of mine quarry
YB56048	PUCK	70	access road
YB56049	PUCK	71	access road; life of mine quarry
YC31888	PUCK	81	airstrip
YC31889	PUCK	82	access road; organic stockpile; tailings facility infrastructure; airstrip
YC31890	PUCK	83	access road; organic stockpile
YC31891	PUCK	84	tailings facility infrastructure

2.3 Future Construction and Maintenance Activities

Construction and maintenance activities are ongoing along the mine access road, within the industrial complex, and within the tailings facility area as described below. All activities will be conducted in accordance with QML-0006 Section 7, Plans approved under Schedule C, and Schedule D unless specified below.

2.3.1 Mine Access Road

In 2007, YZC completed the first phase of access road construction from km ~190 of the Robert Campbell Highway to the mine site, according to the following EMR-approved reports prepared by Yukon Engineering Services and YZC:

- *All Weather Access Road Plan* (June 2006)
- *Phase 1 All Weather Access Road* (October 25, 2006)
- *Phase 2 All Weather Access Road* (January 16, 2007)
- *Wolverine Project General Site Plan, Version 2007-03* (April 6, 2007)
- *Wolverine Project General Site Plan, Version 2008-04* (February 13, 2009)

In 2010, YZC completed road improvements to ensure the safe use by larger vehicles including concentrate haul trucks and other service and supply vehicles. The main improvements included grade reduction, re-sloping of cut and fill slopes, road widening and the addition of pull out bays in certain locations, addition of a granular surface in specific areas, and progressive reclamation activities. A remotely-controlled gate is installed at the start of the access road to prevent unauthorized use. For additional details, refer to the *Wolverine Mine QML-0006 2010 Annual Report*.

Road maintenance activities and improvements are ongoing, and an assessment will be conducted in the near future to determine requirements to complete the access road to the Phase 2 level described in Appendix A. As required by *QML-0006*, within 60 days of completing the Phase 2 access road, YZC will submit an as-built report containing engineered-stamped drawings and descriptions of any reclamation activities undertaken or to be undertaken in relation to any borrow sites used in access road construction.

2.3.2 Industrial Complex Area

An aerial view of the industrial complex area is shown in Picture 2-1. Future infrastructure construction and decommissioning activities within the industrial complex area include:

- Completion of the truck shop to service underground and surface vehicles (2011).
- Decommissioning of the Procon offices and shop and construction of a wet shotcrete plant within that area (2011-12).
- Installation of impermeable containment at the fuel storage area with capacity equivalent to 110% of the largest fuel tank or 10% of the total capacity of all the tanks, whichever is greater (as previously outlined in GSP 2008-04).
- Decommissioning of Sumps 1, 3, 4, and 5 (2011-12).

- Construction of a water treatment plant and discharge pipeline in 2013 or 2014 following pilot plant testwork (testing to be completed by fall 2011) and detailed design (2012).
- Installation of an additional genset within the power generation area (2012).

Picture 2-1: Surface Infrastructure within the Industrial Complex (August 10, 2010)

2.3.3 Tailings Facility

The current infrastructure in the tailings facility area is shown in Picture 2-2.

Picture 2-2: Aerial View of Tailings Facility and Airstrip (June 2, 2011)

As documented in the *Tailings and Related Infrastructure Design and Construction Plan V2009-02*, YZC will commence with construction of the ultimate tailings dam in fall 2011 as per the general arrangement shown in Figure 2-4. *Issued for Construction* drawings will be submitted in early fall 2011 as an addendum to the *Tailings and Related Infrastructure Design and Construction Plan V2009-02*. Future construction activities include:

- Excavation of borrow from within the impoundment area and stockpiling of this material in fall 2011 for raising of the dam from the downstream side in spring 2012.
- Foundation preparation of the ultimate dam footprint and proof rolling of the foundation.
- Excavation of the ultimate spill and placement of riprap.
- Final grading and proof rolling of the ultimate impoundment footprint in preparation for placement of the liner.
- Placement of liner bedding in areas of rough foundation and excavation of an anchor trench around the impoundment perimeter and dam.
- Placement of the liner and backfilling of the liner anchor trench.

As per QML-0006 Section 7.8, as-built drawings and a summary of construction activities, including any quality assurance or quality control monitoring, will be submitted within 60 days of construction completion.

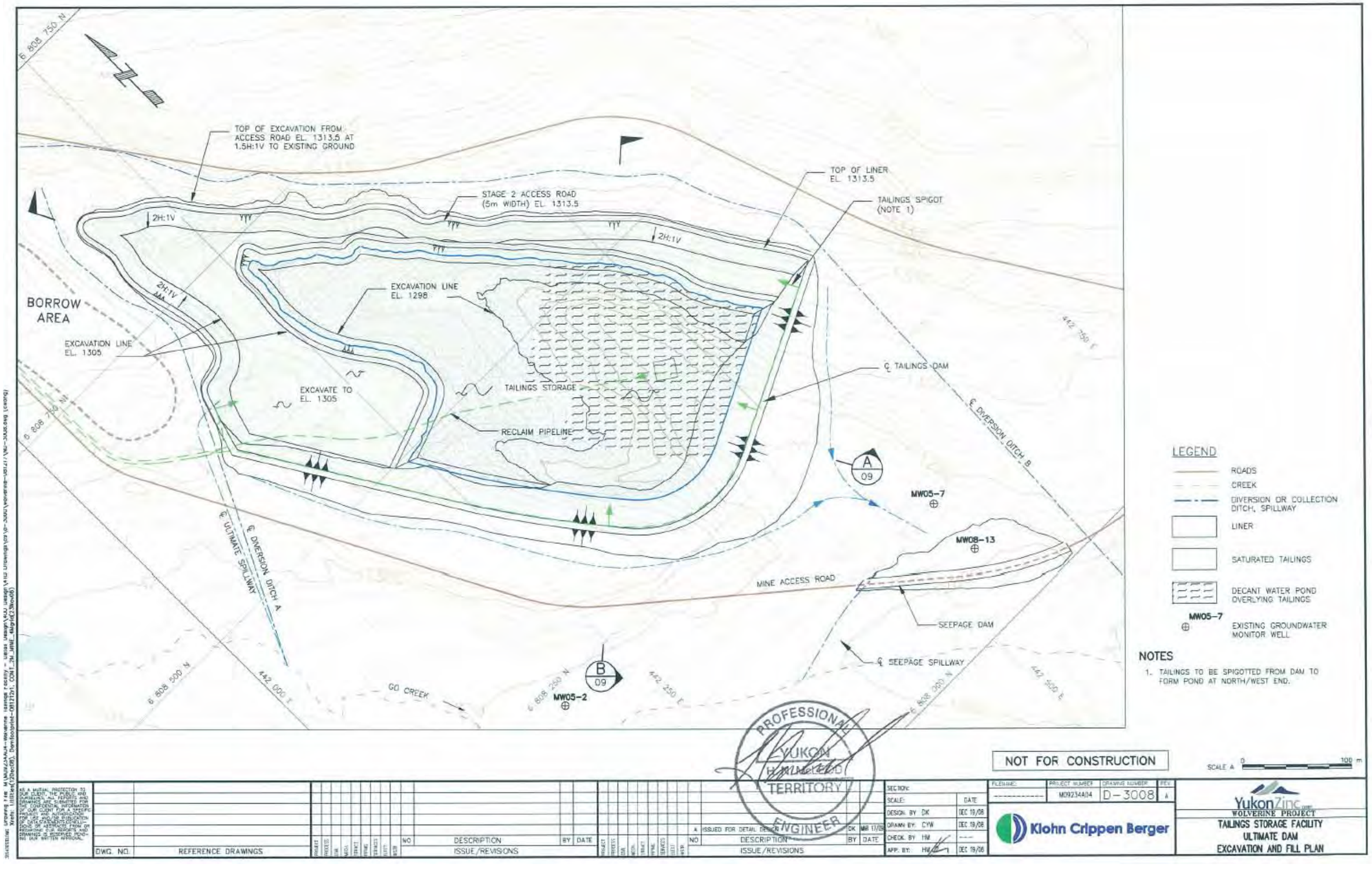


Figure 2-4: Tailings Facility Ultimate Dam Excavation and Fill Plan

2.3.4 Operations Phase Waste Rock Stockpile

A temporary waste rock and ore storage pad, constructed during the advanced exploration phase (under Quartz Mining Land Use Permit LQ00140 and Type B Water Licence QZ01-051) contains waste generated from the 2005 test mining program and subsequent mine pre-production development. Some of the stored ore and waste materials were used to commission the mill in summer 2010. A recent photo of the waste rock pad is provided in Picture 2-3.

Picture 2-3: Temporary Waste Rock and Ore Storage Facility (taken June 1, 2011)

YZC is currently in the process of revising the mine plan, and has determined that waste rock will continue to be transported to surface as development progresses, and the waste rock will not be incorporated in mine backfill during the initial three years of operations to ensure continued safe underground mine operations.

The existing waste rock pad is at capacity and it is necessary to store additional development rock on surface until sill stopes are mined and paste backfilled, and subsequent levels are mined and ready for placement of waste rock fill during backfilling activities. YZC estimates that over this period, storage for approximately 325,000 t or 171,000 m^3 is required[1]. The previously designated area for waste surface storage in the operations phase (referred to as the DMS stockpile area during project permitting) up gradient of the tailings facility will be used for this purpose. Figure 2-5 provides the general layout for the operations waste rock pad, and nearby borrow area for the ultimate dam raise and impoundment expansion area mentioned above.

[1] Based on *in situ* density of 1.9 t/m^3

The operations waste rock pad will be designed and constructed as per the specifications of the existing waste rock pad. Once the foundation is prepared, an impermeable liner will be installed to capture and direct all drainage from the pad via a lined ditch to the tailings facility. A construction plan and *Issued for Construction* drawings will be submitted as an addendum to this GSP once completed, and prior to the initiation of any construction activities. As per QML-0006 Section 7.8, as-built drawings and a summary of construction activities, including any quality assurance or quality control monitoring, will be submitted within 60 days of construction completion.

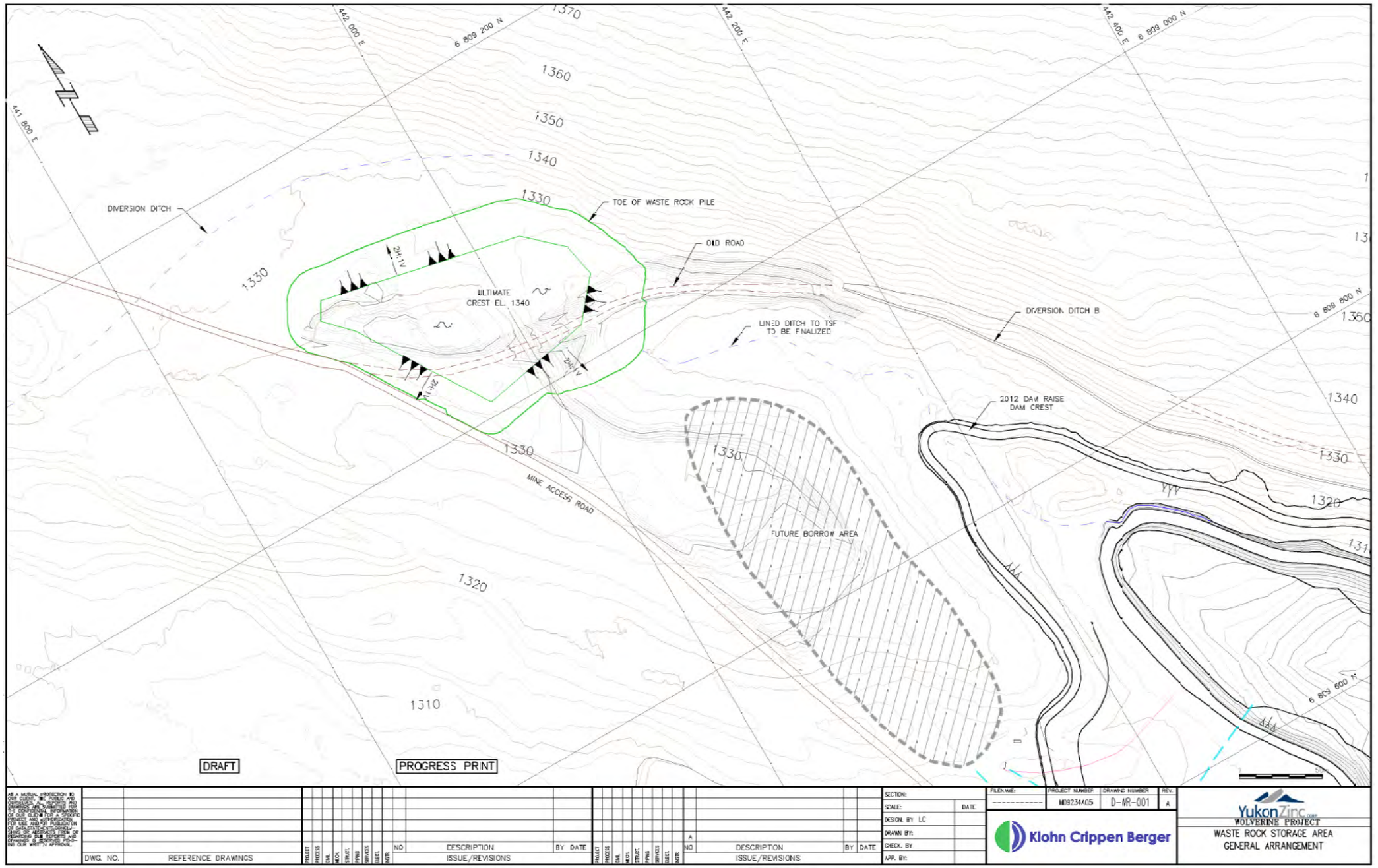


Figure 2-5: Operations Waste Rock Storage Area General Arrangement

Appendix A: Mine Access Road Design

Content from GSP V2007-03

- Section 5.3 Access Road
- Wolverine All Weather Access Road Issued for Construction Plan/Profile Sheets km 0 to 24 (Issued January 2007, revised April 5, 2007)

Content from GSP V2008-04

- Wolverine All Weather Access Road Issued for Construction Plan/Profile Sheets km 23.0 to 27.2 (November 2008)

5 Transportation *Infrastructure*

Infrastructure to support transportation requirements during site development and operation includes existing and new site roads, the mine access road from the Robert Campbell Highway and the airstrip.

5.3 Access Road

YZC will construct access to the site from kilometer 189+965 of the Robert Campbell Highway to the project site in two phases with construction of a limited-use access road (Phase 1) in late May 2007 to mobilize equipment to site, and construction of the Phase 2 access road in fall 2007.

YZC retained Yukon Engineering Services Inc (YES) to complete the route selection, preliminary design, geotechnical assessment, detailed design, tendering, construction management and quality assurance. YES retained the services of EBA Engineering Consultants Ltd. (EBA) to provide professional geotechnical evaluations of the route and sources, undertake a roadway geotechnical testing program, complete laboratory testing of samples taken along the route and from granular sources, and to provide construction recommendations resulting from their investigations and laboratory results. AMEC Earth & Environmental developed the environmental (ARD/ML) testing protocol provided in Section 5.3.6.

Details pertaining to road design, stream crossing details, borrow sources, environmental and geotechnical testing protocols and outcomes, traffic and access control measures, best management practices and mitigation measures for construction related activities, construction monitoring plans, and reclamation plans and cost estimates for closure of the road and borrow sites are provided below.

5.3.1 Phase 1 Access Road

The first phase of the access road development is the construction of a ~24 km long limited-use access road from km 189+965 of the Robert Campbell Highway to the mine site for the purpose of hauling in equipment and supplies required to set up the construction camp and for the onset of construction activities scheduled to commence in summer 2007. From the highway, the access road corridor follows Putt Creek and crosses small Money Creek tributaries before transitioning into the Go Creek drainage and the mine.

In order to minimize impact, and to better control access in the long term, YZC has chosen to construct its access road along the alignment of the cleared geotechnical investigation trail, which itself is within the footprint of the ultimate Phase 2 access road clearing, and in the steeper side-hill areas, will fall within the ultimate roadway prism. Details and drawings for the Phase 1 access road are contained within *General Site Plan Version 2006-02*. Although construction of the Phase 1 road has been delayed, it will be constructed within the same footprint proposed for winter construction. A part of the project monitoring by the onsite geotechnical manager will be to assess the conditions of the original ground prior to placement of sub-base materials. If sufficient ground ice contents are observed, the fill thicknesses will be correspondingly increased to preserve the permafrost.

5.3.2 Phase 2 Access Road

The second phase entails construction of an all weather access road for use by concentrate haul trucks and service vehicles during the operations phase. The road will be a private, single lane road with passing bays, will have restricted access and will be operated under radio control. The road will be used year round with minimal load restrictions. Design and construction details for this phase are detailed within the following sections.

The design of the Phase 2 road meets Transportation Association of Canada (TAC) RLU 60 Single Lane Resource Road, (with inter-visible two lane sections) employing the standards summarized in Table 1.

The Phase 2 access road design has been revised subsequent to the completion of the geotechnical field investigation (July 2006) and granular investigation (October 2006) programs executed by EBA Engineering Consultants Ltd, and following the Lidar Bare Earth topography provided by Woolpert on behalf of YZC. The EBA investigation reports were previously provided in *General Site Plan Version 2006-02*.

The road design drawings are provided in at the end of this document and have been sealed by Paul J. Knysh, Yukon P.Eng. This road design is Issued for Construction, and is complete in terms of impact and construction requirements. All assessments to date have been completed using techniques suiting the level of investigation required using systematic development planning.

Route selection and design were based on hydrology studies, stream data collection, terrain analyses and air photo interpretation of soils conditions, by hand sample truthing of the mapped interpretations, then by a two phase geotechnical investigation. Contributing information to the design included a review of assessments by:

- *Surface Geology, Soils and Associated Interpretations. Wolverine Biophysical Surveys* (Mougeot Geoanalysis 1996)
- AXYS Environmental Consulting Ltd. (satellite imagery interpretation of *Surficial Materials Distribution*)
- Jack Dennett, P.Geol., EBA Engineering Consultants Ltd., YES Geotechnical Sub-consultant (air photo interpretation)
- Paul J. Knysh, P.Eng., and Rob Harvey of Yukon Engineering Services Inc. (air photo interpretation)
- EBA Engineering Consultants Ltd. (Geotechnical Investigation)
- Bare Earth LiDAR topography (Woolpert)

The Phase 2 route is “final”, within acceptable uses of the term. The alignment is fixed within a defined corridor of 50m in width, except at controlling stream crossings, where the alignment is considered final at its present location to within +/-10m. The controlling stream crossings are provided in Table 2.

Table 1. Adapted Transportation Association of Canada Single Lane Resource Road Standards

- Desirable Minimum Curve Radii	- 170m (Level of Service and Safety)
- Minimum Curve Radii	- 120m (TAC: LVR = 130, RLU = 120)
- Minimum Switch-back Radii[1]	- 55m
- Maximum Gradient[2]	- 13% (TAC)
- Actual Maximum Gradient	- 11.6% (8% max. achieved in most cases)
- Minimum "k" Factor Crest	- 15 (TAC: LVR = 18, RLU = 15)
- Minimum "k" Factor Sag	- 10 (TAC: LVR = 18, RLU = 10)
- Single Lane Width	- 6m crowned @ 3% (TAC: LVR = 4m)
- Two Lane Width	- 8.5m crowned @ 3%
- Super-elevation	- Emax 6%
- Minimum Culvert Diameter	- 600mm or Q^{100} whichever is greater
- Culvert Installations	- as per *YG 06010-1, -2, -3, -4, -5, -6, -7*
- Clearing	- Machine and Hand Clearing as per: *YG Sections 03010, 03011* - to 15m either side minimum, or 3m beyond cuts (tree root protection), 6m beyond fills (access to reclaim stripping), whichever is greater.
- Surfacing Aggregate	- 300mm as per *YG Section 04060*
- Sideslopes (fill)	- 2H:1V ratio (except as noted below) - 1.5H:1V ratio, where safety berms are employed. (Rock embankment)
- Backslopes (earth cut)	- 1.5H:1V ratio
- Backslopes (rock cut)	- 0.5H:1V ratio
- Ditch Depth	- 1m
- Ditch Type	- "V" Ditch, with widenings for side-borrow.
- Safety Berms	- 0.75m Ht. where Fills > 10m, or where downhill side hazard requires. Roadbed widened 1.5m to accommodate.
Compactive Density	- 95% Standard Proctor (Embankment) - 98% Standard Proctor Density (Surfacing Aggregate and culvert bedding/backfill)

[1] Utilized in two situations: Bunker Ck. at km 10.25, to avoid a beaver dam, and at km 13.0, to avoid two stream crossings and for economic considerations.
[2] TAC LVR recommends maximum gradients of 13% in mountainous terrain, and 10% in semi-mountainous terrain. 8% was selected for safety, erosion control and reduced operating costs.

Table 2. Controlling Stream Crossings along the Road Alignment

Stream Crossing	Figure 1 Dwg #	km Location	Latitude	Longitude	Nominal Crossing Width at Centreline ****	Structure Type
Pitch	"km 1.5"	2.74	61° 28' 50.1"	129° 53' 32.1"	0.5m	1600mm Dia. CSP*
Putt	"km 3"	2.89	61° 28' 46.8"	129° 53' 33.5"	1.6m	2400mm Dia. CSP*
Bunker	"km 9"	10.25	61° 25' 21.6"	129° 56' 01.6"	4.5m	21.336m Single Lane Resource Bridge**
Bogie	"km 15"	15.59	61° 24' 00.3"	129° 59' 25.2"	0.9m	1000mm Dia. CSP***
Hawkowl	"km 22.5"	23.11	61° 24' 00.4"	130° 03' 49.8"	1.2m 0.9m	1600mm Dia. CSP at km 23+113, 1000mm Dia. CSP at km 23+085 overflow stream

* CSP = Corrugated Steel Pipe Helical Culvert.

** Contractor supplied pre-Engineered Structure as per Fig. 1: AE Shop Dwg. No. *3751-SK-601, 602, 603.* Armtec Bin Wall Abutment Dwg. No. *BW 02-07 001, 002, BW-40001E, BW-40002W, km 9* - Plan/Profile, *Bunker* - General Layout.

*** Fluming required. Refer to Figure 1.

**** YES completed topographic surveys of all stream crossings in July 2006, including edge of water, top of bank, OHWM and thalweg.

Phase 2 design elements have not changed significantly since the initial road design submission (June 2006). The following exceptions apply as shown in the attached drawings:

- **0 to 0.7 km** – The intersection with the Campbell Highway has been relocated, to 189+965 km of the Campbell Highway as per Access Permit #1560. This was done in order to accomplish the following:
  - improve the intersection visibility for public safety
  - avoid permafrost over shallow bedrock 0 to 0.7 km
  - reduce impact by including the first section of roadway within the footprint of the planned Borrow Pit, Staging and Camp Area
- **0.7 to 2.9 km** – Grade-lines were lowered, as ice contents within the discontinuous permafrost in this section were found to be generally less than 10% in granular soils. Should site-specific observations during construction so dictate, road grades will be raised to preserve the permafrost.
- **7.5 to 9.0 km** – Revised grade-lines ensure adequate embankment over ice-rich permafrost in this section. Non-woven geotextile will be applied over undisturbed organic materials prior to backfilling.
- **10.1 to 10.7 km** – Grade-lines have been improved from 10% to 8% for the section as a result of the more accurate surface topography. The design of the road through the Bunker Creek section has been optimized to the required

standards. TAC RLU/LVR 60 provides for a maximum gradient of 13%, while the grade through the Bunker Creek section is at 10.29%. To flatten the hill would result in a huge change to the mass haul balance and higher construction costs. To adjust the alignment so that the road would follow the hill around would result in changes to the bridge design to allow for the long trucks to enter onto the bridge while still negotiating the corner. The cost of installing the modified bridge is high and the current road design fits within the proposed standards. Although it appears that the grades lines have been steepened to keep the span of the crossing as short as possible, in actuality the bridge was made as short as possible to allow the grades to be flattened. The approaches to the bridge were made as flat as possible to minimize impact to the bridge structure with heavy loads crossings. Vertical impacts to the bridge structure could result in higher maintenance and shorter life span of the entire bridge unit. It is the opinion of YES, that the design as proposed is satisfactory through this section.

- **10.7 to 16.4 km** – Grade-lines have been modified from the consistent 8%, to varying grade-lines of 6% to short "pitches" of 10%, due to the improved topography.
- **16.5 to 17.4 km** – The road alignment was changed in order to avoid wet swampy ground on the glacio fluvial terrace area.
- **Throughout:**
  - accurate surface topography accommodated a complete grade-line revision throughout the entire alignment
  - test pit information provided representative bedrock profile information, as well as reliable stripping, waste-cut and grubbing thickness

Phase 2 borrow pit, granular sources and side-borrow areas have been identified for the entire Phase 2 roadway and are shown in the attached drawings. Table describes the conditions, Phase 2 Construction Method, and resultant plan for each segment along the ~24 km route.

During road construction the geotechnical engineer will assess the conditions of the original ground prior to placement of sub base materials. If, in the opinion of the geotechnical manager the original ground does not provide a stable base for the sub grade as designed, he will have the responsibility to recommend a course of action. This course of action could take the form of "benching in" the new materials, insulating to prevent degradation, or design modifications to the road alignment or profile. The subsurface soil and permafrost conditions in the sliver fill areas will be assessed to ensure that slope instability is minimized. If sufficient ground ice contents are observed, the fill thicknesses will be correspondingly increased to preserve the permafrost. Table 4 lists the guidelines for the geotechnical monitoring protocols during road construction.

Table 3. Phase 2 Methods of Clearing and Construction

KM RANGE		CLEARING METHOD	CONSTRUCTION METHOD	COMMENT
FROM	TO			
0+000	0+385	MACHINE CLEARING	OPTIMAL CUT TO FILL METHODS	STAGING, CAMP, BORROW
0+375	0+535	HAND CLEARING	>1.5M FILL TYPICAL	BOG / SWAMP CROSSING
0+535	2+700	MACHINE CLEARING W/ STRATEGIC HAND CLEARING	NORMAL W/ STRATEGIC GEOTEXTILE, 1.5m FILL TYPICAL	SPORADIC PERMAFROST, ICE CONTENT <10% TYPE, SOME ICE CONTENT >10%.
2+700	2+765	HAND CLEARING	EMBANKMENT CLEAN GRANULAR	PITCH CREEK CROSSING
2+765	2+855	MACHINE CLEARING	OPTIMAL CUT TO FILL METHODS	GRANULAR DEPOSIT BETWEEN CREEKS.
2+855	2+915	HAND CLEARING	EMBANKMENT CLEAN GRANULAR	PUTT CREEK CROSSING
2+915	4+035	MACHINE CLEARING W/ STRATEGIC HAND CLEARING	NORMAL W/ STRATEGIC GEOTEXTILE, 1.5m FILL TYPICAL	SPORADIC PERMAFROST, ICE CONTENT <10% TYPE, SOME ICE CONTENT >10%.
4+035	4+095	HAND CLEARING	OPTIMAL CUT TO FILL METHODS	UNNAMED STREAM CROSSING
4+095	4+935	MACHINE CLEARING W/ STRATEGIC HAND CLEARING	NORMAL W/ STRATEGIC GEOTEXTILE, 1.5m FILL TYPICAL	SPORADIC PERMAFROST, ICE CONTENT <10% TYPE, SOME ICE CONTENT >10%.
4+935	4+995	HAND CLEARING	OPTIMAL CUT TO FILL METHODS	UNNAMED STREAM CROSSING
4+995	5+425	MACHINE CLEARING W/ STRATEGIC HAND CLEARING	NORMAL W/ STRATEGIC GEOTEXTILE, 1.5m FILL TYPICAL	SPORADIC PERMAFROST, ICE CONTENT <10% TYPE, SOME ICE CONTENT >10%.
5+425	5+485	HAND CLEARING	OPTIMAL CUT TO FILL METHODS	UNNAMED STREAM CROSSING
5+485	6+300	MACHINE CLEARING W/ STRATEGIC HAND CLEARING	NORMAL W/ STRATEGIC GEOTEXTILE esp. km 5+700 to 5+725, km 5+850 to 5+925 1.5m FILL TYPICAL	SPORADIC PERMAFROST, ICE CONTENT <10% TYPE, SOME ICE CONTENT >10%.
6+300	6+360	HAND CLEARING	OPTIMAL CUT TO FILL METHODS	UNNAMED STREAM CROSSING
6+360	6+600	MACHINE CLEARING W/ STRATEGIC HAND CLEARING	NORMAL W/ STRATEGIC GEOTEXTILE, 1.5m FILL TYPICAL	SPORADIC PERMAFROST, ICE CONTENT <10% TYPE, SOME ICE CONTENT >10%.
6+600	6+660	HAND CLEARING	OPTIMAL CUT TO FILL METHODS	UNNAMED STREAM CROSSING
6+660	6+948	MACHINE CLEARING W/ STRATEGIC HAND CLEARING	NORMAL W/ STRATEGIC GEOTEXTILE, 1.5m FILL TYPICAL	SPORADIC PERMAFROST, ICE CONTENT <10% TYPE, SOME ICE CONTENT >10%.
6+948	7+500	HAND CLEARING	GEOTEXTILE, 1.5m FILL TYPICAL	DISCONTINUOUS ICE RICH PERMAFROST
7+500	7+575	MACHINE CLEARING	OPTIMAL CUT TO FILL METHODS	
7+575	9+100	HAND CLEARING	GEOTEXTILE, 1.5m FILL TYPICAL	
9+100	10+035	MACHINE CLEARING	OPTIMAL CUT TO FILL METHODS	
10+035	10+285	HAND CLEARING	OPTIMAL CUT TO FILL, PRE-ENGINEERED L100 SINGLE LANE RESOURCE BRIDGE	BUNKER CREEK CROSSING, BEAVER DAM
10+285	14+940	MACHINE CLEARING	OPTIMAL CUT TO FILL METHODS	SIDEHILL ASCENT
14+940	15+000	HAND CLEARING	HAND CLEARING	CHIP CREEK TRIBUTARY #1
15+000	15+070	MACHINE CLEARING	OPTIMAL CUT TO FILL METHODS	SIDEHILL ASCENT
15+070	15+130	HAND CLEARING	HAND CLEARING	CHIP CREEK TRIBUTARY #2
15+130	15+530	MACHINE CLEARING	OPTIMAL CUT TO FILL METHODS	SIDEHILL ASCENT, ROCK PREVALENT
15+530	15+590	HAND CLEARING	HAND CLEARING	BOGIE CREEK CROSSING
15+590	16+550	MACHINE CLEARING	OPTIMAL CUT TO FILL METHODS	SIDEHILL ASCENT, ROCK PREVALENT
16+550	18+650	MACHINE CLEARING	SMALL CUT TO FILLS	GLACIO FLUVIAL PLATEAU
18+650	20+155	MACHINE CLEARING	OPTIMAL CUT TO FILL METHODS	SIDEHILL DESCENT, ROCK PREVALENT
20+155	20+215	HAND CLEARING	HAND CLEARING	UNNAMED STREAM CROSSING
20+215	20+670	MACHINE CLEARING	OPTIMAL CUT TO FILL METHODS	SIDEHILL DESCENT
20+670	20+740	HAND CLEARING	HAND CLEARING	UNNAMED STREAM CROSSING
20+740	21+430	MACHINE CLEARING	OPTIMAL CUT TO FILL METHODS	SIDEHILL
21+430	21+490	HAND CLEARING	HAND CLEARING	UNNAMED STREAM CROSSING
21+490	23+030	MACHINE CLEARING	OPTIMAL CUT TO FILL METHODS	SIDEHILL
23+030	23+115	HAND CLEARING	HAND CLEARING	HAWKOWL CREEK CROSSING, TWIN CULVERT INSTALLATION
23+115	24+000	MACHINE CLEARING	OPTIMAL CUT TO FILL METHODS	SIDEHILL

Table 4. Guidelines for Geotechnical Monitoring Protocols

Location	Structure Type	Guideline
Pitch Creek - km 2.74 Putt Creek - km 2.89	1600 mm dia. CSP 2400 mm dia. CSP	Monitor the installation of the culvert. The base must be properly prepared, and all culvert bedding and backfill materials must be compacted in maximum lift thicknesses of 300mm, with each lift compacted to at lest 98% of SPMDD (ASTM D698)
Bunker Creek - km 10.25	21.336 Single Lane Resource Bridge	Monitor the installation of the Bin-Wall foundation and test all required geotechnical components of abutment construction such as footing or pile installations, concrete pours and backfill compaction.
Bogie Creek - km 15.59 Hawkowl Creek - km 23.11 Hawkowl Creek overflow	1000 mm dia. CSP 1600 mm dia. CSP 1000 mm dia. CSP	Monitor the installation of the culvert. The base must be properly prepared, and all culvert bedding and backfill materials must be compacted in maximum lift thicknesses of 300mm, with each lift compacted to at lest 98% of Standard Proctor Maximum Dry Density (SPMDD) (ASTM D698)
General Embankment	Throughout the entire length of the access road	Periodically monitor and complete compaction testing on embankment fills while on site during culvert installations and bridge construction. Embankment fills must be compacted to 98% SPMDD. Assist the project engineer with determination of suitable fill materials being sourced from road cuts and borrow sites.

Once the Bunker Creek Phase 1 temporary bridge is installed and a more detailed geotechnical investigation of subsoil conditions completed in the area, excavation and abutment foundation details of the Bin-Wall will be finalized.

5.3.3 Access Tie-In and Staging Areas

Yukon Engineering Services and Yukon Highways and Public Works Transportation Maintenance Branc has completed its assessment of the proposed intersection of the access road with the Campbell Highway. This has been done by way of confirming required sight distances based on the Rural Arterial 80 km/hr posting (TAC RAU 80) and designation of the Campbell Highway at present, and the intended RAU 90 designation of the Campbell Highway upgrades over the coming years.

The intersection with the Campbell Highway has been relocated from 189.4 to kilometer post 189+965, at the proposed staging area. Access Permit #1560 is attached. A road construction camp and staging area will be constructed near the Campbell Highway for both Phase 1 and Phase 2. The staging area will be used throughout the construction of the mine and road. It is proposed to combine the access intersection, the construction camp and staging area into one development area.

Construction needs for the staging area will include:

- access road construction camp, engineering office
- temporary storage of materials, camp and equipment awaiting availability of access to the mine site
- storage of culverts and other associated road construction materials
- temporary parking and maintenance of construction equipment
- temporary fuel, parts and lubricant storage and distribution

Operational needs for the staging area include:

- chaining of trucks during the winter months
- holding area for vehicles awaiting authorization to proceed onto the access road
- access control gate

5.3.4 Access Control

Access control is required for three scenarios:

1. Access control during mine operation, including the construction phase.
2. Access control during temporary closure.
3. Access control following permanent closure.

Operational Access Control

Access control during mine construction and operation will be by way of a manned gate situated at the south end of the construction camp / staging area, near km 0+350.

Prior to operation of the access road, and prior to completion of the road construction, YZC will develop a *Manual of Rules for the Operation of the Wolverine All Weather Access Road*. This manual will provide final procedures for access road control, traffic control plans, and rules for use. In general terms, the Manual will formalize the following:

- All travelers will be advised that respecting the posted speed limit of 60 km/hr is mandatory for single vehicle traveling safety and so that all authorized vehicle drivers can anticipate the progress of other vehicles on the road, between Kilometer announcements.
- As all authorized vehicles and maintenance equipment will be radio-equipped, the following policy will be respected by all operators of authorized vehicles and maintenance equipment:

  - After authorizing a vehicle to proceed, and upon the vehicle passing the gate, the Gate Operator will announce "*Authorized Vehicle*" (or "Authorized Visitor" to suggest lesser familiarity on the part of the driver) "*Kilometer 0.5 Empty*"[3], "*Unit 17, Service Truck*". This provides an aural outline or reminder of the announcement protocols for all drivers.

  - "Loaded" traffic already on the road will announce their updated locations in a similar manner ("*Kilometer 17 Loaded, Concentrate Hauler*", or "*Kilometer 6, Grader on the Road*").

  - Empty vehicles must yield to loaded vehicles. Empty vehicles will pull over in designated two lane areas when a loaded vehicle is within 2 km, and will announce: "*Kilometer 7.6 Pullout, Empty Waiting, Unit 17, Service Truck*".

[3] "Loaded" refers to the direction of haul for loaded concentrate haulers (ie: from the mine site to shipping port)

Traffic control plans will be executed and enforced through the gate house and the Wolverine Mine site.

The gate house will be staffed by a trained operator, with current Advanced First Aid, during all hours and on all days that the road is to be used. The facility will be equipped with the following:

- heated facility with electrical generation, telephone, facsimile and VHF radio communications
- instructions for Authorized Use of Access Road
- current manifest of Authorized Users. Authorized Users will be limited to company vehicles and authorized company personnel, contract suppliers, transporters (supplies, concentrate haul), company agents of specialists, and YG personnel
- access road VHF radios and visitor unit numbers for authorized visitors and emergency vehicles

The gate house operator's duties will include:

- confirming authorization for access
- ensuring that all vehicles are equipped with operable access road VHF radios (radios will be checked at the gate by the operator) and visitor unit numbers. VUN's will be highly visible magnetic unique decals attached high on the driver's door of all visiting vehicles
- maintaining a manifest of authorized visitor access road VHF radios and VUN's
- retrieving all radios and VUN's from authorized visitors
- providing written instructions for access road rules, and access road radio use
- providing a verbal review of the instructions to first time visitors
- logging all access road radio communications, and locations of all vehicles along the road
- monitoring access road radio communications, to eliminate "chatter" and non-safety communications
- dispatching emergency equipment and personnel
- advising all traffic, including road maintenance traffic of unnoticed or unacknowledged traffic activity on the road
- advising all traffic of road conditions or hazards, including wildlife
- providing a daily access road report of all activities and traffic

Figures 1 and 2 provide details of the Operational Access Control Gate, adopted from YG HPW Single Swing Gate details (GateSSI.dwg and GateSSE.dwg)

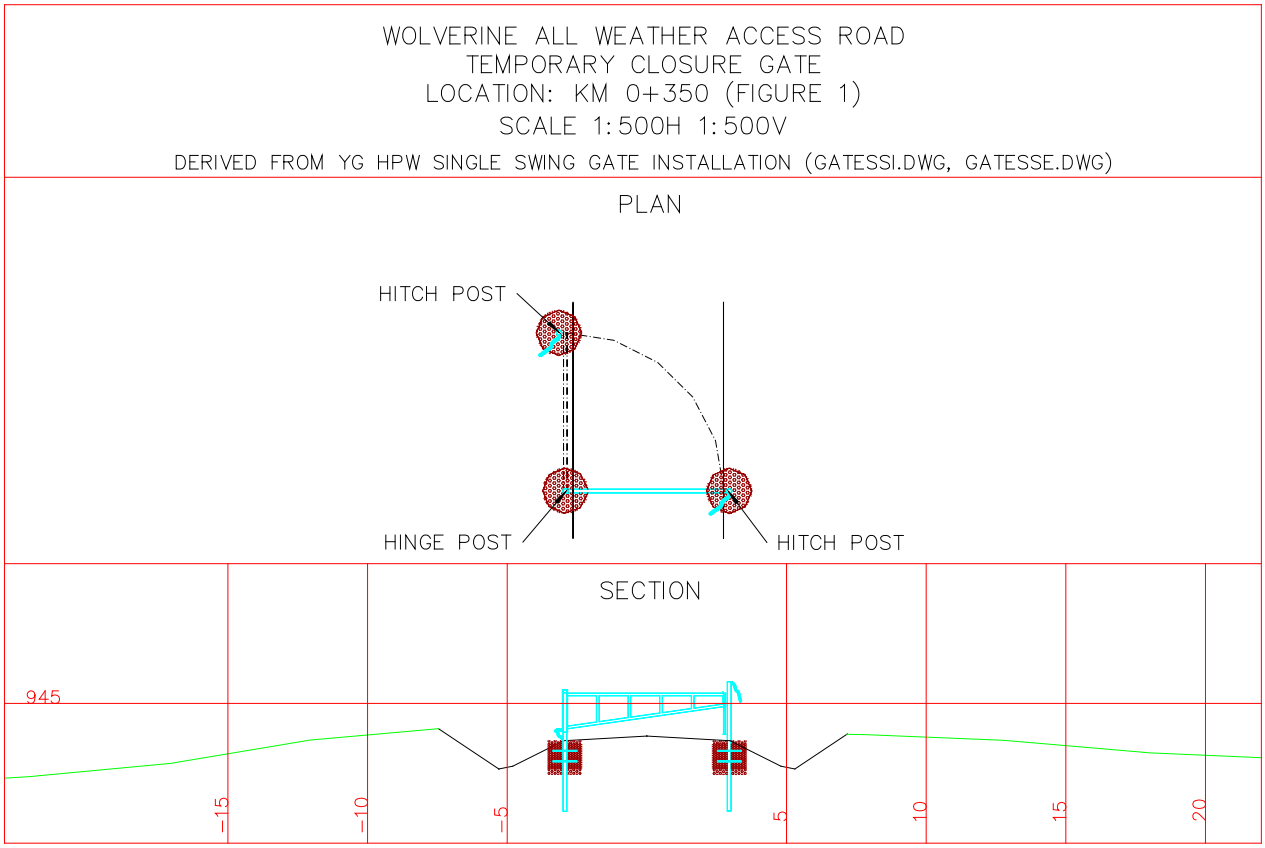


Figure 1. Operational Access Control Gate

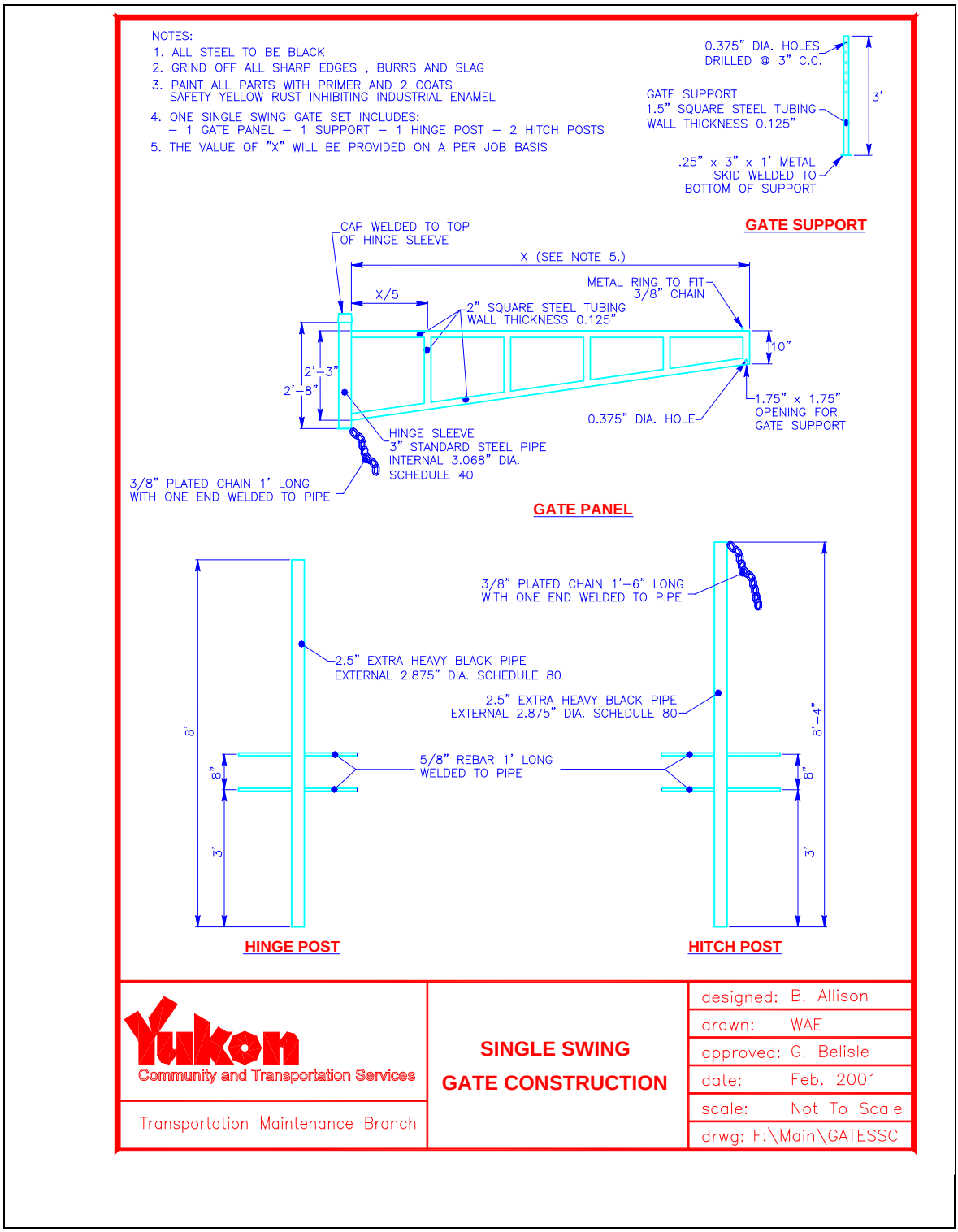


Figure 2. YG HPW Single Swing Gate

5.3.4.1 Temporary Closure Access Control

Access control will be required in the event of a temporary closure of the mine and the temporary suspension of hauling operations. Temporary closure access control will be employed immediately following both of the above conditions. The Operational Access Control Gate will also be locked closed, but will not be manned, unless deemed necessary from periodic inspections.

The selection of the Temporary Closure Access Control gate location was critical to deny access to highway vehicles, all terrain vehicles and snow mobiles, and to deter hunting and recreational access to the Go Creek drainage system.

YG Environment (M. George et al) provided input to the selected location, near km 13+025. This location is on a 10% ascending gradient, some 3 km north of the glacio fluvial plateau that separates the upper Money Creek and Go Creek drainages. The precise location is also in a rock cut, where the rock back-slopes will be 0.5H :1V or vertical.

Figure 3 provides details of the Temporary Closure Access Control Gate.

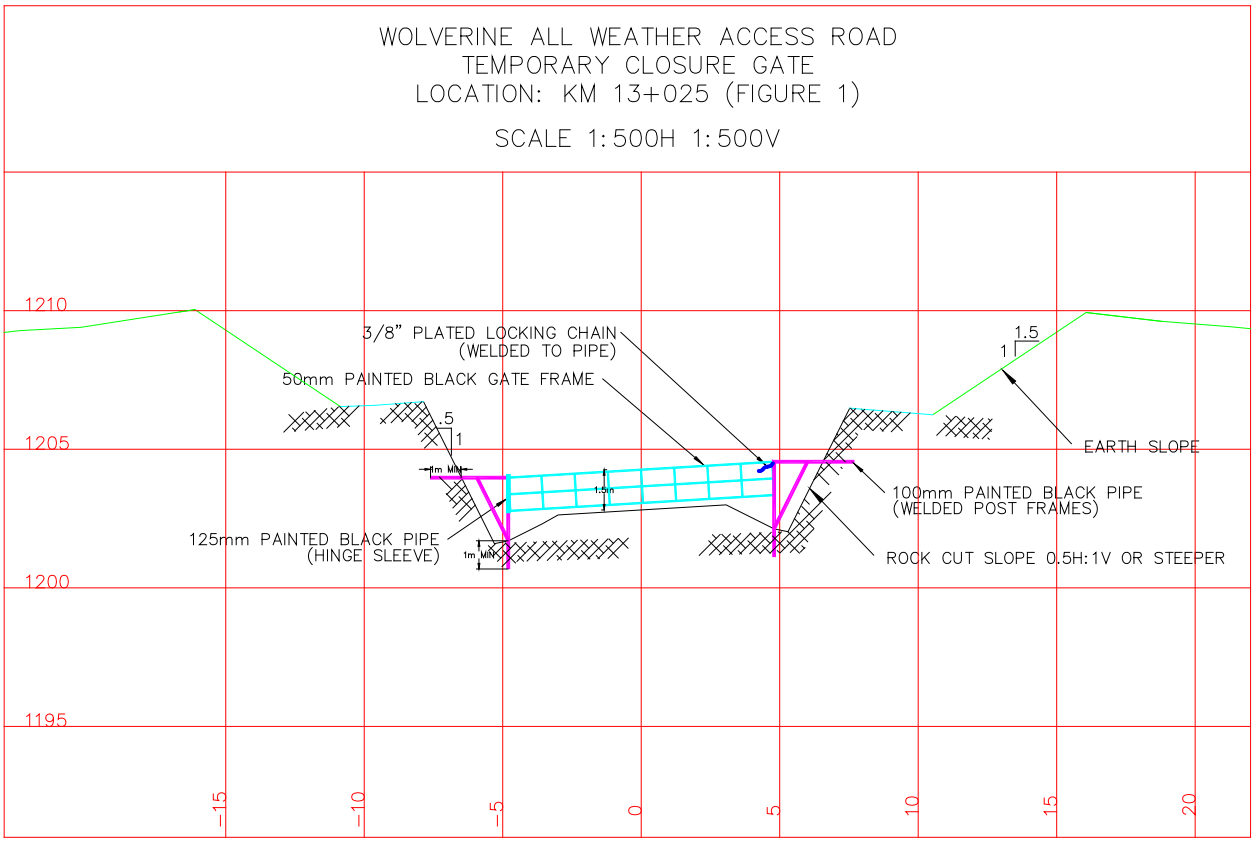


Figure 3. Temporary Closure Access Control Gate

5.3.4.2 Permanent Closure Access Control

Access control will ultimately be required upon the completion of mining and hauling operations.

Permanent Closure Access Control will be the final step in mine closure and reclamation, (including the removal of all road culverts, and the reshaping of roadway embankments) as access is required for these activities.

Permanent road closure activities will entail the removal (and hauling offsite) of the bridge at Bunker Creek (km 10.25) and the removal of the culvert at Bogie Creek (km 15.59), as well as the construction of blast rock obstacles within the rock cuts on the km 10.4 to km 16.5 ascending gradient.

5.3.5 Borrow Sources

Originally it was planned to utilize side-borrows for all roadway embankment rather than specific borrow sources. Subsequent geotechnical investigations by EBA however, have indicated ice rich permafrost in portions. This has resulted in the need to extract common excavation as well as granular surfacing material from designated sources in some areas.

Information used to develop the Borrow Source Plan was derived from EBA's two-phase geotechnical investigation (details provided in *YZC General Site Plan Version 2006-02*).

Of the nine possible borrow targets investigated, five will be developed during Phase 2 road construction, as summarized in Table 5 and in the attached figures. Haul roads are also shown in the attached figures.

Table 5. Phase 2 Designated Borrow Sources along the Road Alignment

PIT	STA	O/S	GROSS AREA (Ha.)	NET AREA (Ha.)	AVG DEPTH (m)	COMMON (m^3)	GRANULAR SURFACING (m^3)	CONCRETE AGGREGATE (m^3)	TOTAL (m^3)
P1	210	0	5.3	2.7	2	3,000	3,000	-	6,000
S3A	2560	70	1.6	0.8	2	9,000	3,000	-	12,000
S3B	2810	70	1.1	0.6	2	-	9,000	-	9,000
P2A	11060	60	1.0	0.5	2	-	8,000	-	8,000
P2B	10960	130	0.6	0.5	2	-	5,000	5,000	5,000
P4A	16560	-100	2.9	1.5	2	22,000	7,000	-	29,000
P4B	17310	110	3.0	1.5	2	23,000	7,000	-	30,000
P3	23460	-150	1.0	0.5	2	-	8,000	-	8,000
TOTALS			**16.5**	**8.5**	**2.0**	**57,000**	**50,000**	**5,000**	**107,000**

Phase 2 borrow source areas will be developed according to acceptable construction practices, and to standards currently employed by the Yukon Government in its execution of highway construction contracts. Specifically:

- Prior to clearing, additional construction test pit information will be used to confirm the optimum depth of planned excavation. These depths will

be used to confirm the extents of each source, with appropriate consideration to setbacks from streams and escarpments.

- A **Borrow Source Development Plan** drawing will be provided on a case-by-case basis to the Contractor. This Development Plan will include instructions for the development stage: storage of overburden soils and organic stripping materials, stockpiling of granular screened or crushed product for construction and maintenance, designated area for setting up of a screening plant, limits of clearing, any required drainage remedies, and buffer areas; and for the reclamation stage: sloping of borrow walls (2H:1V maximum steepness recommended), re-contouring of pit area and haul road, creation of enhancements as may be directed, contouring of organic overburden over the surface area, and seeding.
- Limits of clearing for the borrow source and the haul road will be flagged in the field as per the Development Plan.
- Clearing, disposal and salvage will be completed by the Contractor, according to standards provided in *YG Sections 03010, 03011*.
- Once cleared, the extents of the planned borrow excavation will be laid out in the field, leaving the required overburden storage and buffer zones.
- Grubbing and stripping operations will be by way of bulldozing materials to the perimeter of the cleared area, leaving adequate space to re-access the materials for reclamation.
- Excavation will be limited to the development area as shown on each specific Borrow Source Development Plan.
- Where granular deposits are underlain by colluvium, till or other materials suitable for common embankment, these materials will be used for roadway sub-grade construction purposes.
- "Oversize" boulders rejected by crushing or screening operations will be employed as riprap where feasible, or stockpiled for future use as rock pile barricades at the entrances to the borrow source haul roads.

Once construction and maintenance requirements are met, the borrow source sites will be reclaimed as identified in each specific Borrow Source Development Plan.

5.3.6 Geochemical Protocol for Evaluation

YZC retained the services of AMEC Earth & Environmental to develop a protocol for environmental testing of construction materials and cut slopes along the access road from the Robert Campbell Highway to the Wolverine mine property. Construction materials used as borrow material along the road route may consist of unconsolidated sediments (soils, till, gravel, etc.) and bedrock. The protocols outlined below have and will be used for sampling and analysis along the access road to determine acid rock drainage and metal leaching (ARD/ML) potential. At sites of interest, the following actions will be carried out:

1. Visual inspection

   An inspection of the borrow source site or road cut will be completed by a qualified geoscientist or engineer. The inspection will be used to assess the areas for potential ARD/ML conditions. The visual inspection will include a geologic assessment of the following parameters:

   - rock type(s)
   - sulphide content
   - carbonate content
   - presence or absence of other ARD/ML indicators (iron-staining, etc.)

   The inspection will be focused on the potential for the site to produce ARD/ML if disturbed. This assessment will include a visual characterization of the mineralogy of the borrow material. Detailed descriptions of the type and amount of sulphide mineralization will include the size and shape of grains, any visible weathering, and a visual estimate of the proportion of sulphides to host rock. Careful attention will also be paid to features such as quartz and carbonate veins in the host rock, as well as the presence of iron staining and secondary precipitates that may have formed on the host rock during in situ weathering.

2. Sampling

   Following the completion of visual inspections, sites will be sampled to provide sufficient material for environmental testing. Sampling will be conducted to collect a representative sample from each geologically distinct unit within an area. Samples will weigh a minimum of 2 kg. Depending upon their volume, large homogenous borrow sources may require multiple samples. After sampling, each sample will be bagged and carefully labelled with a unique identifier.

3. Analysis

   Samples will be submitted to a certified environmental laboratory for testing. This will include the following analyses: paste pH, total sulphur, sulphate sulphur, sulphide sulphur (by difference), neutralization potential and metals by aqua regia-ICP. Analytical methods will follow current industry standards and/or those described in the Draft BC ARD Guidelines (Guidelines) by Price (1997[4]).

4. Assessment Analysis

   The resulting field inspection and testing data will be assessed by a qualified geoscientist or engineer. The data will be assessed according to criteria described in the Guidelines. This will include an assessment of the neutralization potential, acid generation potential and metal leaching potential of the borrow sources. Additional testing or assessment may be required as a result of the initial assessment.

[4] Price, W.A. (1997), DRAFT Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia, British Columbia Ministry of Employment and Investment, Energy and Minerals Division, Smithers, BC, (April), 143p.

Samples will be screened according to the following criteria as per the Guidelines:

a. Net Potential Ratios (NPR, or NP/AP), where

NPR <1	Likely acid generating
NPR >1 and NPR<2	Potentially acid generating
NPR >2 and NPR<4	Not likely acid generating
NPR >4	Non-acid generating

b. Sulphide sulphur content, where

S_S >0.3%	Potentially acid generating
S_S <0.3%	Non-acid generating

c. Paste pH, where

pH<5.5	Potentially acid generating
pH>5.5	Non-acid generating

d. Neutralization Potential, where

NP<10 kg $CaCO_3$/tonne	Potentially acid generating
NP>10 kg $CaCO_3$/tonne	Non-acid generating

Materials with NP values below 10 kg $CaCO_3$/tonne should undergo additional testing consisting of the shake flask extraction test (as per the Guidelines) to determine the presence of leachable acidity or metals.

Materials that are likely or potentially acid generating, and/or with leachate chemistries in exceedance of the Guidelines, would be excluded from use as road or construction material. Alternatively, additional study could be conducted on these materials to establish their suitability, or to determine what mitigative steps would need to be taken to ensure the material's safe use.

5.3.7 2006 Geochemical Evaluation

The access road from the Robert Campbell Highway to the Wolverine mine property was assessed and sampled for geochemical testing at any significant road cuts, and significant lithology changes by YZC Project Geologist Gilles Dessereau and EBA in October 2006. Sampling was conducted as per the protocol requirements developed by AMEC. A summary of the onsite sampling by YZC and EBA and acid-base accounting test results are provided below.

A thick organic cover over the first 9 km (from the Robert Campbell Highway) of the road route prevented any bedrock or overburden sampling by YZC in this area. The last ~4 kms were also covered with thick organic layers and the bedrock and/or overburden were not sampled. EBA collected samples for geotechnical purposes and upon further examination, submitted geochemical samples for areas over the first 3 km and at two other locations where the organic mat or permafrost did not limit sampling. A summary of the onsite inspections and sample locations are provided in Table 6 and in the attached figures.

Table 7 summarizes the geochemical test results for the fourteen samples collected and submitted for analyses.

Table 6. Summary of Geochemical Sampling Field Observations

Sample ID	Location (km)	Description	Fizz Rating (1-10*)	Sulfide Content (%)	ARD Potential Estimate
JD10-4-2-G1	0+100	Borrow Pit Primary 1, Staging Area, Construction Camp - 3.0 m testpit depth	-	-	-
JD-10-3-4	1+600	1.6 m testpit depth	-	-	-
JD-10-6-4G	2+800	Borrow Pit Secondary 3, 3.0 m testpit depth	-	-	-
WVR06-01	9+400	Small cut on west side of road, poorly sorted, well rounded glacial-fluvial overburden	5	<1	nil
WVR06-03	10+000	Road cut immediately north of Bunker Creek. Poorly sorted, well rounded glacial-fluvial overburden	1	<1	nil
JD10-5-1G	10+300	Road cut immediately south of Bunker Creek, Borrow Site Primary 2, 3.0-5.0m testpit depth	-	-	-
WVR06-02	10+400	Road cut on west side of road, poorly sorted, well rounded glacial-fluvial overburden	0	<1	nil
WVR06-04	14+100	Road cut on west side of road, poorly sorted sub-rounded to sub-angular glacial overburden	1	<1	nil
WVR06-05	15+100	Large outcrop on west side of road greenstone with abundant greenstone cobbles in creek bed	1	<1	nil
WVR06-06	15+400	Large outcrop on east side of road well foliated greenstone	1	<1	nil
WVR06-07	15+800	Large outcrop on west side of road near creek greenstone	1	<1	nil
JD10-06-10G	17+200	Borrow Pit Primary 4 on fluvial terrace, 3.0 m testpit depth, Money/Go Drainage Divide	-	-	-
WVR06-08	18+700	Large outcrop on west side of road greenstone	1	<1	nil
WVR06-09	20+000	Colluvium on west side of road consisting of cobbles and boulders of greenstone	1	<1	nil

Note: Fizz rating 1= no visible CO_2 production with the addition of 10% HCl; Fizz rating 10= abundant CO_2 production with the addition of 10% HCl. ; Visual assessment information was not collected by EBA during their geotechnical program (samples beginning with JD)

Table 7. 2006 ABA Test Results for the Access Road

Sample ID	Location (km)	Paste pH	Fizz Rating	NP kg CaCO3/t rock	AP kg CaCO3/t rock	NNP kg CaCO3/t rock	NPR -	Total S %	Sulphate S %	Sulphide S %	Acid Potential*
JD10-4-2-G1	0+100	8.2	2	55	0.9	54	58.67	0.03	<0.01	0.03	NAG
JD-10-3-4	1+600	8.7	3	217	1.9	215	115.75	0.06	<0.01	0.06	NAG
JD-10-6-4G	2+800	8.4	3	52	0.9	51	55.47	0.03	<0.01	0.03	NAG
WVR06-01	9+400	8.4	2	55	1.9	53	29	0.06	<0.01	0.06	NAG
WVR06-03	10+000	7.6	1	11	0.9	10	12	0.03	<0.01	0.03	NAG
JD10-5-1G	10+300	7.7	1	6	<0.3	6	38.4	<0.01	<0.01	<0.01	Uncertain
WVR06-02	10+400	7.4	1	4	1.3	3	3	0.04	<0.01	0.04	Uncertain
WVR06-04	14+100	7.5	1	9	0.3	9	29	0.01	<0.01	0.01	Uncertain
WVR06-05	15+100	8.4	2	19	<0.3	19	122	<0.01	<0.01	<0.01	NAG
WVR06-06	15+400	8.4	2	24	0.3	24	77	0.01	<0.01	0.01	NAG
WVR06-07	15+800	8.7	2	13	0.3	13	42	0.01	0.02	<0.01	NAG
JD10-6-10G	17+200	7	1	7	0.6	6	11.2	0.02	<0.01	0.02	Uncertain
WVR06-08	18+700	8.2	1	13	<0.3	13	83	<0.01	<0.01	<0.01	NAG
WVR06-09	20+000	8.6	1	12	0.3	12	38	0.01	<0.01	0.01	NAG

Notes: AP = Acid potential in tonnes $CaCO_3$ equivalent per 1000 tonnes of material; NP = Neutralization potential in tonnes $CaCO_3$ equivalent per 1000 tonnes of material.
NNP = NP – AP; NPR = NP/AP; NAG = Non-acid Generating ;S = Sulphur
*Acid Potential based on paste pH, sulphide sulphur, NPR and NP; < = Less than analytical detection limit

AMEC has reviewed the ABA results for the access road samples according to the protocol described above, and concluded the following:

- All samples with paste pH>5.5 and a sulphide sulphur content significantly less than 0.3% are considered non-acid generating
- Samples WVR06-02, WVR06-04, JD10-6-10G and JF10-5-1G have NP values less than 10 kg $CaCO_3$//tonne. Sulphide sulphur contents of these materials range from <0.01 to 0.02%, and sulphate sulphur contents are less than the detection limit of 0.01%. Based on this assessment, these four samples underwent shake flask extraction (SFE) testing to further assess the presence of leachable acidity and/or leachable metals.

Shake flask testing was conducted at ALS Laboratory Group (ALS) in North Vancouver, BC using a 24 hour 3:1 deionized water to rock extraction procedure as outlined in the Guidelines (Price, 1997). The resulting leachate was analyzed for mercury via cold vapour atomic fluorescence spectrophotometry and other metals via inductively coupled plasma-optical emission spectrophotometry. The results of these analyses are presented in Table 8 and compared to the Canadian Metal Mining Effluent Regulations (MMER) guideline values to identify any parameters that could potentially leach form in-place road construction materials at concentration that may affect receiving water quality.

Leachate pH values ranged between 6.7 and 7.9 and are well within the acceptable range in pH as regulated by MMER. Regulated metals arsenic, lead and nickel were less than detection and less than the maximum monthly mean concentration for all samples. Concentrations of copper ranged from 0.015 to 0.029 mg/L and were at least ten times less than MMER value of 0.3 mg/L. Zinc was detectable only in sample JD10-5-1G, although the concentration of zinc in this sample was more than twenty times less than the maximum monthly mean allowed under MMER guidelines. Based on the results for the 14 samples, there appear to be no concerns for acid drainage or metal leaching from the materials under consideration for road construction.

Table 8. Access Road Shake Flask Extraction (SFE) Analysis Results

Physical Tests		MMER*	WVR06-02	WVR06-04	VD10-6-10G	VD10-5-1G
pH		6.0 - 9.5	7.0	7.9	6.7	7.7
Leachable Metals	**Units**					
Aluminum (Al)	mg/L	-	3.08	2.43	4.19	2.04
Antimony (Sb)	mg/L	-	<0.050	<0.050	<0.050	<0.050
Arsenic (As)	mg/L	0.5	<0.050	<0.050	<0.050	<0.050
Barium (Ba)	mg/L	-	0.632	0.131	0.062	0.290
Beryllium (Be)	mg/L	-	<0.0050	<0.0050	<0.0050	<0.0050
Bismuth (Bi)	mg/L	-	<0.10	<0.10	<0.10	<0.10
Cadmium (Cd)	mg/L	-	<0.010	<0.010	<0.010	<0.010
Calcium (Ca)	mg/L	-	1.49	13.5	0.504	8.38
Chromium (Cr)	mg/L	-	0.013	<0.010	0.011	0.012
Cobalt (Co)	mg/L	-	<0.010	<0.010	<0.010	<0.010
Copper (Cu)	mg/L	0.3	0.029	0.015	0.022	0.023
Iron (Fe)	mg/L	-	4.66	3.14	3.80	3.27
Lead (Pb)	mg/L	0.2	<0.050	<0.050	<0.050	<0.050
Magnesium (Mg)	mg/L	-	1.98	6.74	1.56	4.89
Manganese (Mn)	mg/L	-	0.438	0.326	0.211	0.246
Mercury (Hg)	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010
Molybdenum (Mo)	mg/L	-	<0.030	<0.030	<0.030	<0.030
Nickel (Ni)	mg/L	0.5	<0.050	<0.050	<0.050	<0.050
Phosphorus (P)	mg/L	-	<0.30	<0.30	<0.30	<0.30
Potassium (K)	mg/L	-	9.0	6.2	<2.0	2.1
Selenium (Se)	mg/L	-	<0.050	<0.050	<0.050	<0.050
Silicon (Si)	mg/L	-	9.37	8.33	9.25	8.03
Silver (Ag)	mg/L	-	<0.010	<0.010	<0.010	<0.010
Sodium (Na)	mg/L	-	<2.0	5.1	2.2	<2.0
Strontium (Sr)	mg/L	-	0.0242	0.0366	<0.0050	0.0355
Thallium (Tl)	mg/L	-	<0.20	<0.20	<0.20	<0.20
Tin (Sn)	mg/L	-	<0.030	<0.030	<0.030	<0.030
Titanium (Ti)	mg/L	-	0.076	0.201	0.322	0.044
Uranium (U)	mg/L	-	<0.50	<0.50	<0.50	<0.50
Vanadium (V)	mg/L	-	<0.030	<0.030	<0.030	<0.030
Zinc (Zn)	mg/L	0.5	<0.020	<0.020	<0.020	0.023

Note VD10-6010G = JD10-6-10G and VD10-5-1G = JD10-5-1G

FIGURE 1

Drawings For

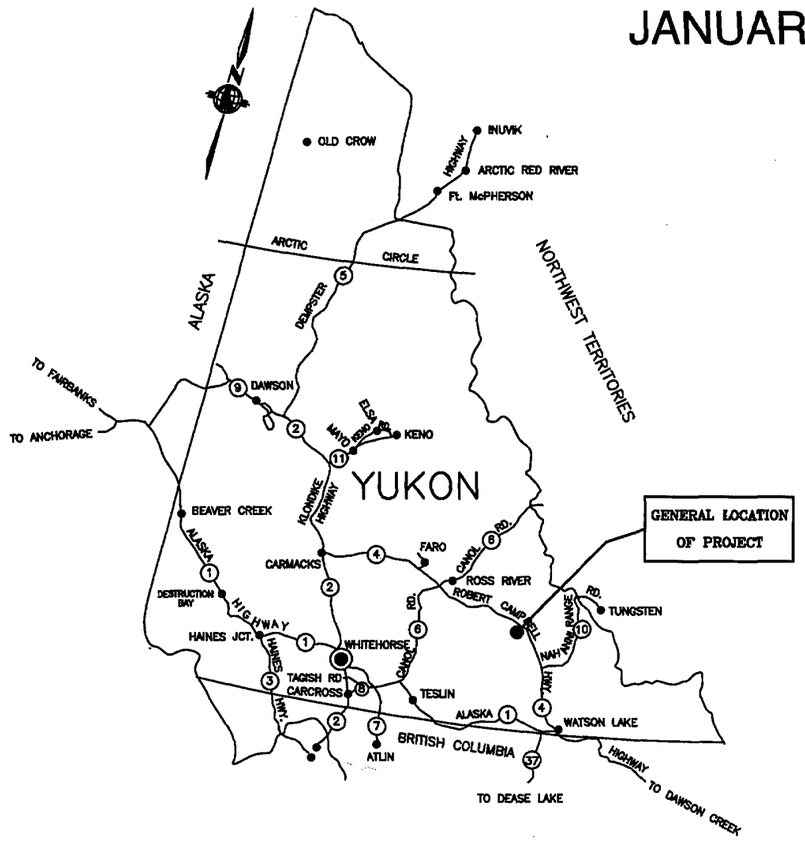
WOLVERINE ALL WEATHER ACCESS ROAD

km 0.0 to km 24.0

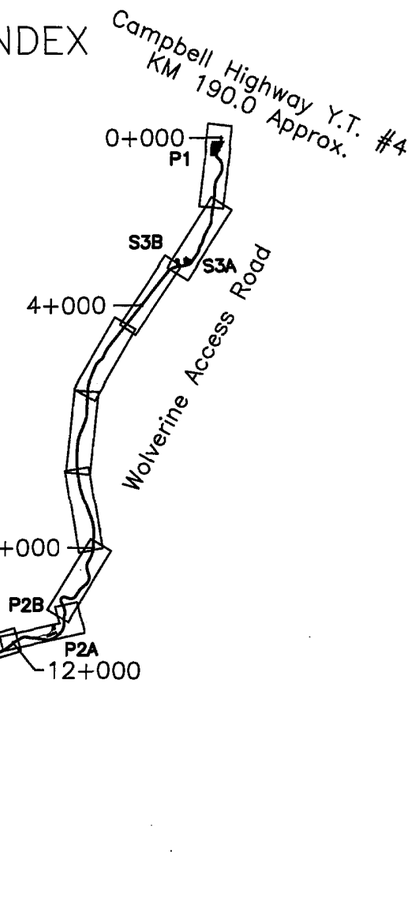
ISSUED FOR CONSTRUCTION

JANUARY 2007

PIT	STA	O/S	GROSS AREA (Ha.)	NET AREA (Ha.)	AVG DEPTH (m)	COMMON (m^3)	GRANULAR SURFACING (m^3)	CONCRETE AGGREGATE (m^3)	TOTAL (m^3)
P1	210	0	5.3	2.7	2	3,000	3,000	-	6,000
S3A	2560	70	1.6	0.8	2	9,000	3,000	-	12,000
S3B	2810	70	1.1	0.6	2	-	9,000	-	9,000
P2A	11060	60	1.0	0.5	2	-	8,000	-	8,000
P2B	10960	130	0.6	0.5	2	-	5,000	5,000	5,000
P4A	16560	-100	2.9	1.5	2	22,000	7,000	-	29,000
P4B	17310	110	3.0	1.5	2	23,000	7,000	-	30,000
P3	23460	-150	1.0	0.5	2	-	8,000	-	8,000
TOTALS			**16.5**	**8.5**	**2.0**	**57,000**	**50,000**	**5,000**	**107,000**



SHEET INDEX



LIST OF DRAWINGS:

PLAN/PROFILE SHEETS:

KM 0 - PLAN/PROFILE KM 0+000 TO KM 1+500
KM 1.5 - PLAN/PROFILE KM 1+500 TO KM 3+000
KM 3 - PLAN/PROFILE KM 3+000 TO KM 4+500
KM 4.5 - PLAN/PROFILE KM 4+500 TO KM 6+000
KM 6 - PLAN/PROFILE KM 6+000 TO KM 7+500
KM 7.5 - PLAN/PROFILE KM 7+500 TO KM 9+000
KM 9 - PLAN/PROFILE KM 9+000 TO KM 10+500
KM 10.5 - PLAN/PROFILE KM 10+500 TO KM 12+000
KM 12 - PLAN/PROFILE KM 12+000 TO KM KM 13+500
KM 13.5 - PLAN/PROFILE KM 13+500 TO KM 15+000
KM 15 - PLAN/PROFILE KM 15+000 TO KM 16+500
KM 16.5 - PLAN/PROFILE KM 16+500 TO KM 18+000
KM 18 - PLAN/PROFILE KM 18+000 TO KM 19+500
KM 19.5 - PLAN/PROFILE KM 19+500 TO KM 21+000
KM 21 - PLAN/PROFILE KM 21+000 TO KM 22+500
KM 22.5 - PLAN/PROFILE KM 22+500 TO KM 24+000

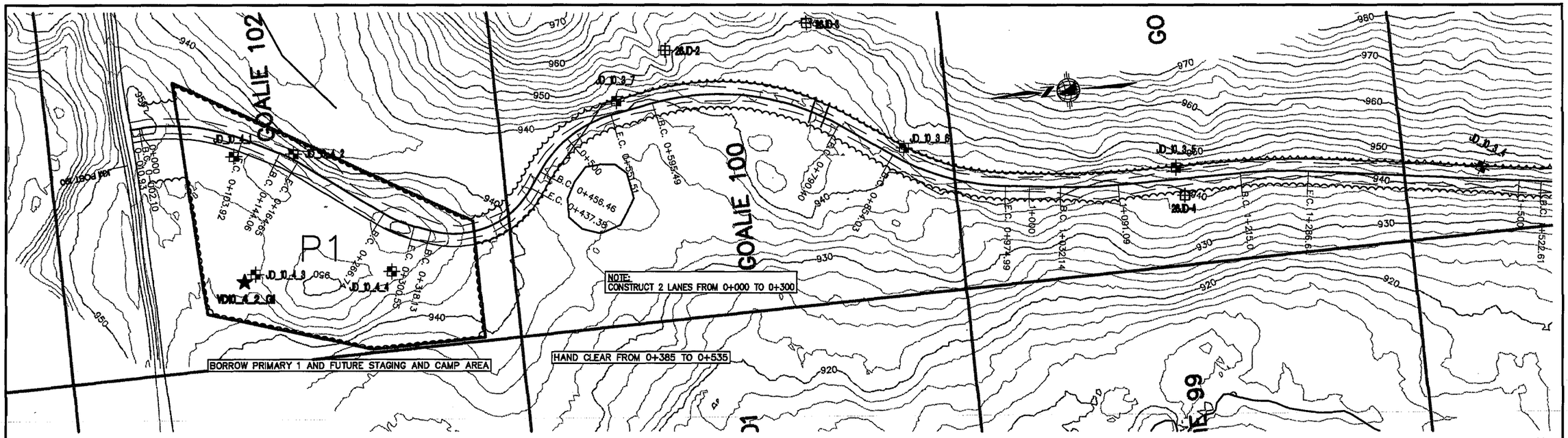
BUNKER CREEK CROSSING:

BUNKER - GENERAL LAYOUT - PLAN/PROFILE SHEET - BUNKER CK BRIDGE
3751-SK-601 - GENERAL ARRANGEMENT (AE)
3751-SK-602 - STEEL GIRDER DETAILS SHEET 1 (AE)
3751-SK-603 - STEEL GIRDER DETAILS SHEET 2 (AE)
BW 02-07001 - BIN WALL BRIDGE ABUTMENT DESIGN (ARMTEC)
BW 02-07002 - BIN TYPE RETAINING WALL BACKFILL INSTRUCTIONS AND DESIGN NOTES (ARMTEC)
BW-40001E - BIN TYPE RETAINING WALL STANDARD DETAILS AND COMPONENTS (ARMTEC)
BW-40002E - BIN TYPE RETAINING WALL STANDARD DEPTH AND HEIGHT COMBINATIONS (ARMTEC)

Yukon Zinc CORPORATION

YES
YUKON ENGINEERING SERVICES

E06015_4_PP.dwg Jan.12/07



LEGEND:
- GEOTEXTILE
- EXISTING GEOTECHNICAL TRAIL/PHASE I ROAD
- 26.D-9 HAND DUG TESTPITS
- 120097-TP01 TESTPITS
- WVR08-006 GEOCHEMICAL TESTPITS

NO	DESCRIPTION	BY	DATE
	ISSUE/REVISIONS		

PROFESSIONAL ENGINEER
YUKON
PAUL J. KNYSH
TERRITORY
07/04/06

NO	DESCRIPTION	BY	DATE
5	REVISED HWY ACCESS PK	PK	04/06/01
4	ISSUED FOR CONSTRUCTION	RH	12/01/07
3	REVISED FOLLOWING GEOTECH REPORT	RH	24/10/06
2	ISSUED FOR TENDER	RH	05/06
1	ISSUED FOR DISCUSSION	RH	05/06
	ISSUE/REVISIONS		

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APPROVED BY: RH	12/01/07

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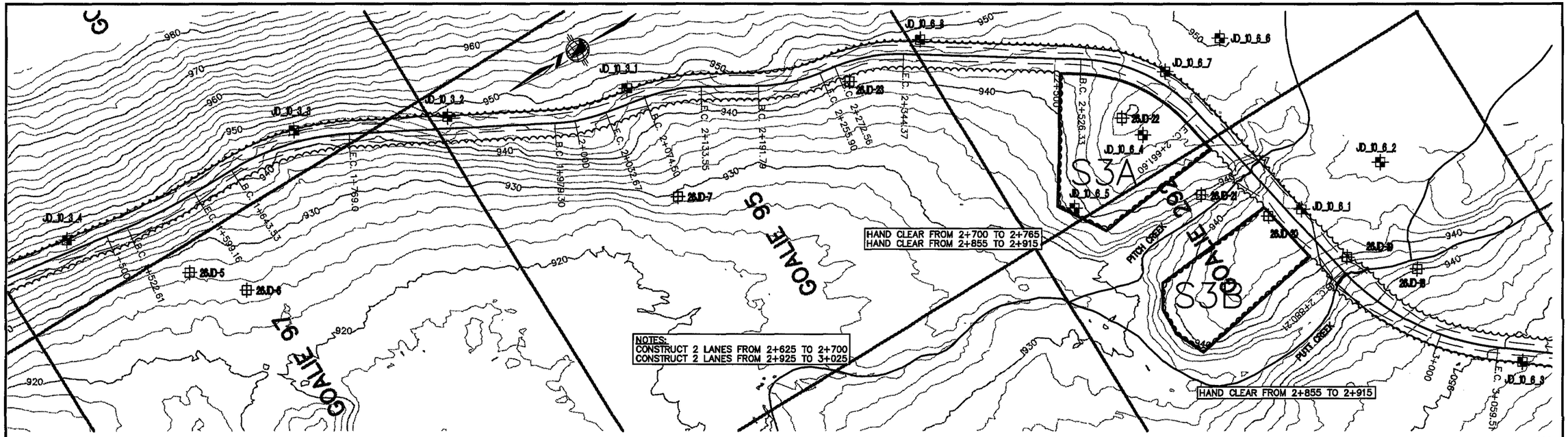
ED6015_4_PP.DWG	ED6015	km 0	4

YES YUKON ENGINEERING SERVICES — Yukon Zinc CORPORATION

ALL WEATHER ACCESS ROAD
ISSUED FOR CONSTRUCTION

WOLVERINE PROJECT
PLAN/PROFILE SHEET
KM 0 TO KM 1.5
FIGURE 1



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- 26JD-9 HAND DUG TESTPITS
- 120097-TP01 TESTPITS
- WRD8-006 GEOCHEMICAL TESTPITS

NO	DESCRIPTION	BY	DATE
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3	REVISED FOLLOWING GEOTECH REPORT	RH	24/10/06
2	ISSUED FOR TENDER	RH	05/06
1	ISSUED FOR DISCUSSION	RH	05/06

PROFESSIONAL ENGINEER — PAUL J. KNYSH — TERRITORY — 27/04/06

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APPROVED BY: RH	12/01/07

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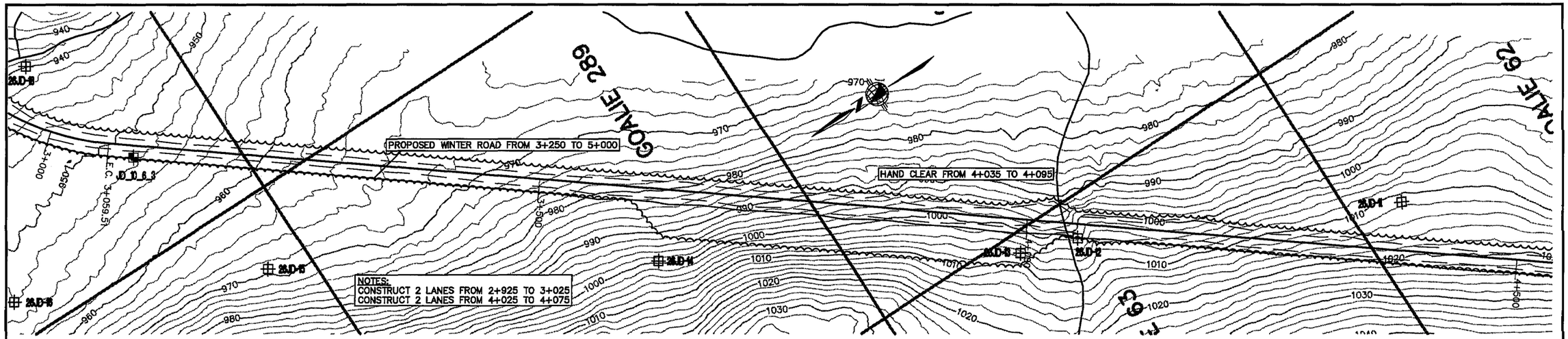
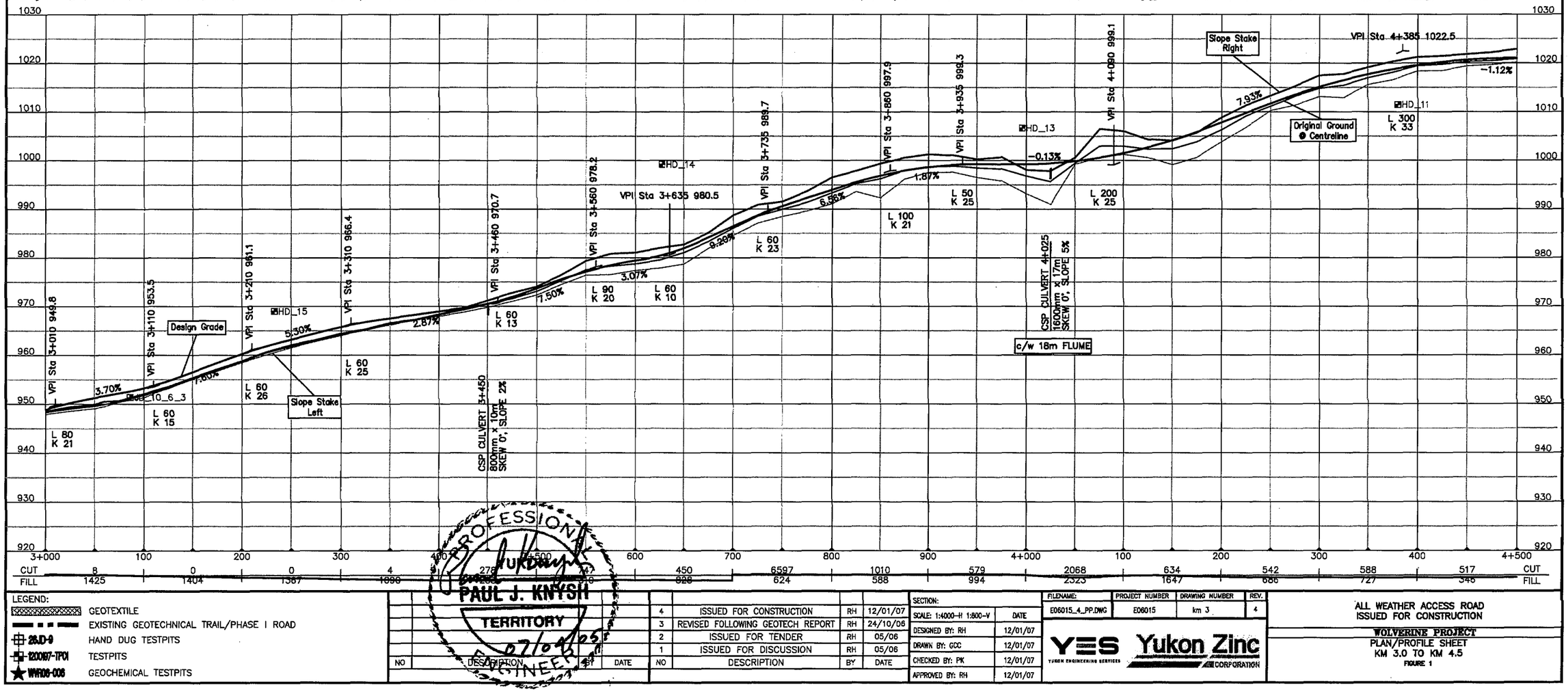
YES YUKON ENGINEERING SERVICES — Yukon Zinc CORPORATION

ALL WEATHER ACCESS ROAD
ISSUED FOR CONSTRUCTION

WOLVERINE PROJECT
PLAN/PROFILE SHEET
KM 1.5 TO KM 3.0
FIGURE 1





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- 25JD-9 HAND DUG TESTPITS
- 1200697-TPDI TESTPITS
- WWR06-006 GEOCHEMICAL TESTPITS

PROFESSIONAL ENGINEER
PAUL J. KNYSH
TERRITORY
07/09/05

NO	DESCRIPTION	BY	DATE
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3	REVISED FOLLOWING GEOTECH REPORT	RH	24/10/06
2	ISSUED FOR TENDER	RH	05/06
1	ISSUED FOR DISCUSSION	RH	05/06

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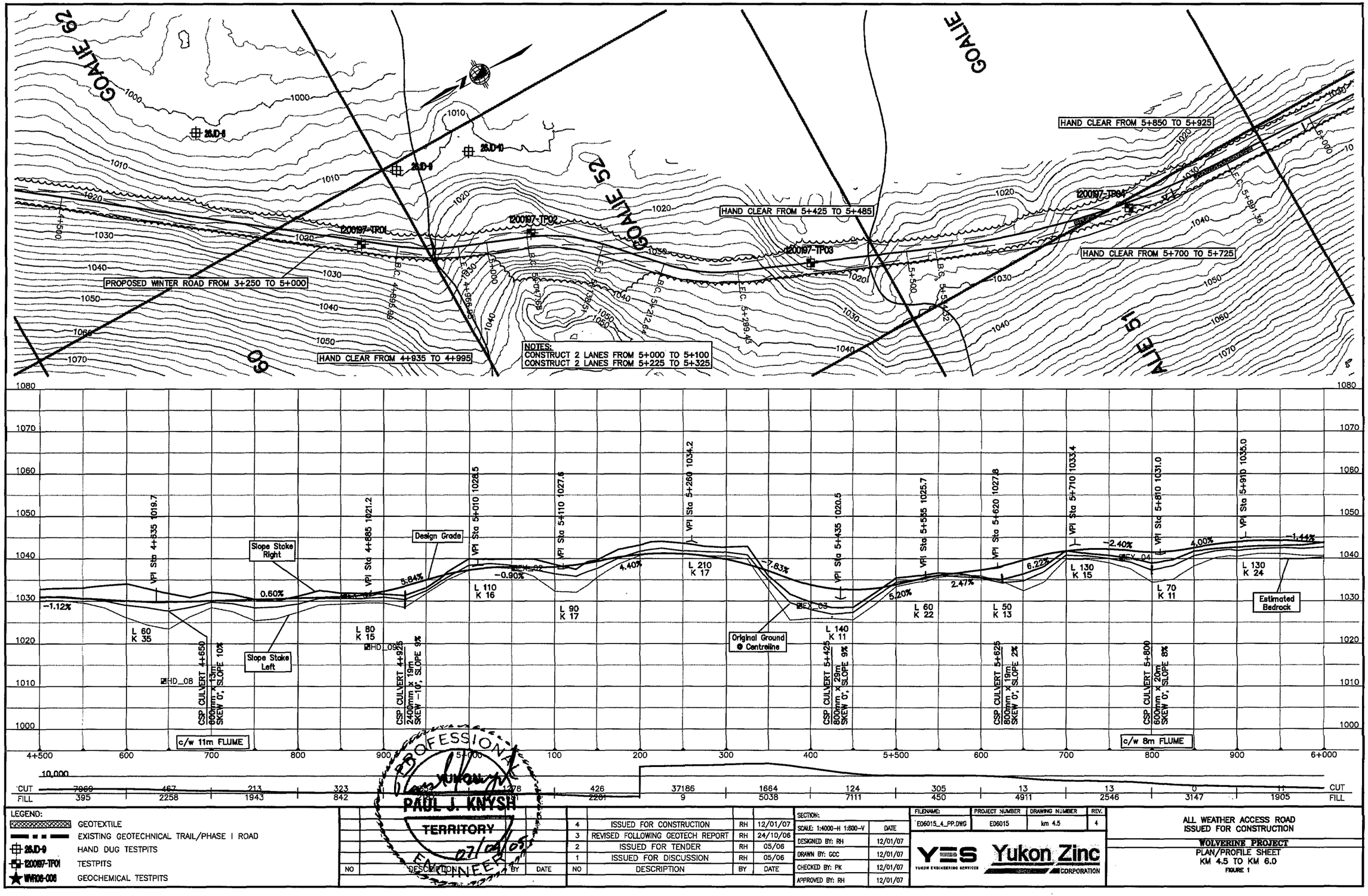
APPROVED BY: RH	12/01/07

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
E06015_4_PP.DWG	E06015	km 3	4

YES YUKON ENGINEERING SERVICES — Yukon Zinc CORPORATION

ALL WEATHER ACCESS ROAD
ISSUED FOR CONSTRUCTION

WOLVERINE PROJECT
PLAN/PROFILE SHEET
KM 3.0 TO KM 4.5
FIGURE 1



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- EXISTING GEOTECHNICAL TRAIL/PHASE I ROAD
- 25.D-9 HAND DUG TESTPITS
- 200197-TP01 TESTPITS
- WWR06-008 GEOCHEMICAL TESTPITS

NO	DESCRIPTION	BY	DATE
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3	REVISED FOLLOWING GEOTECH REPORT	RH	24/10/06
2	ISSUED FOR TENDER	RH	05/06
1	ISSUED FOR DISCUSSION	RH	05/06

PROFESSIONAL ENGINEER — YUKON — PAUL J. KNYSH — TERRITORY — 07/12/05

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APPROVED BY: RH	12/01/07

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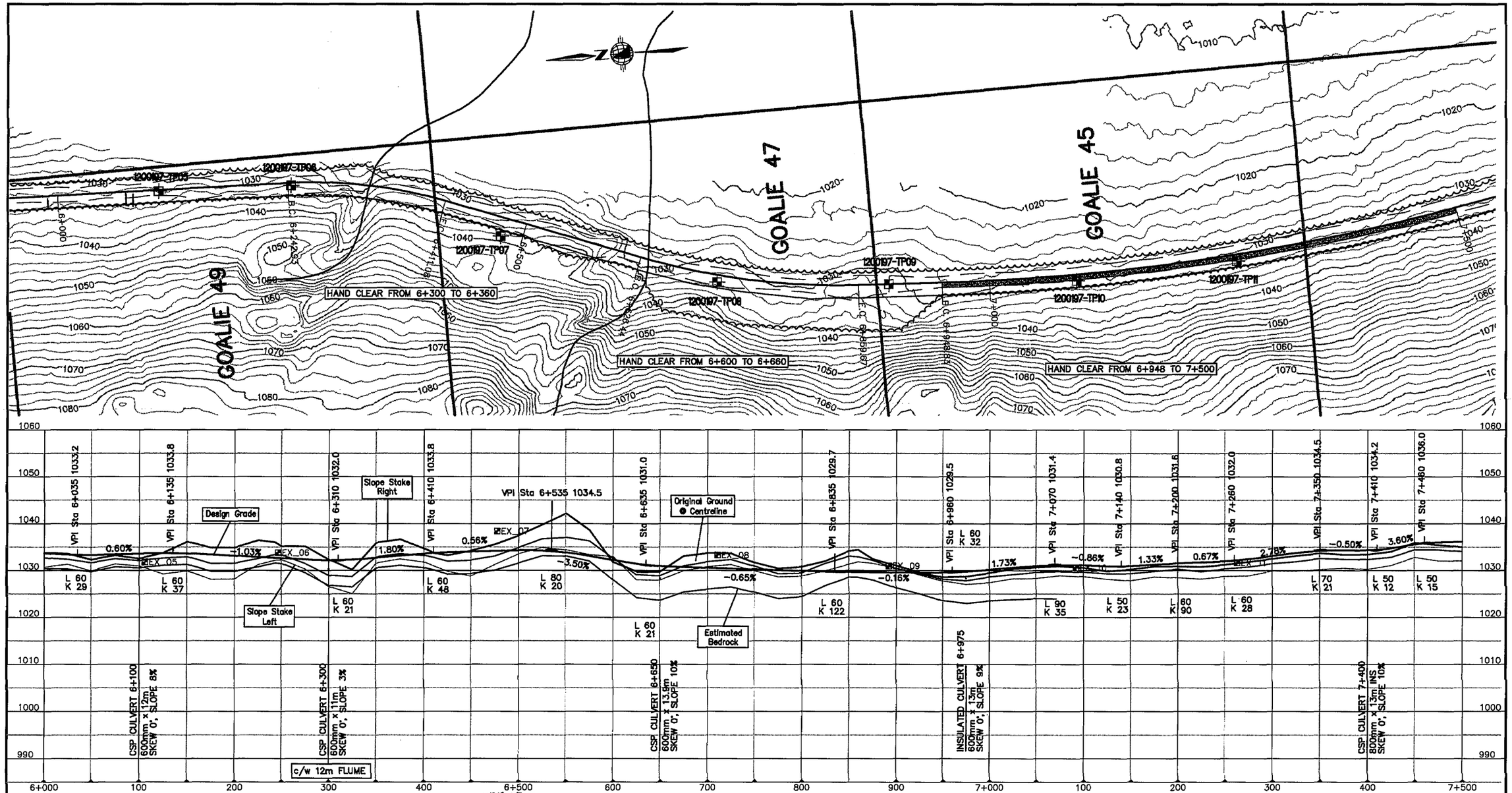
YES YUKON ENGINEERING SERVICES — Yukon Zinc CORPORATION

ALL WEATHER ACCESS ROAD
ISSUED FOR CONSTRUCTION

WOLVERINE PROJECT
PLAN/PROFILE SHEET
KM 4.5 TO KM 6.0
FIGURE 1



CUT	55	357	983	1014	668	1614	1857	49671	39	10	4	7	39	CUT
FILL	1393	1866	1276	2393	1256	221	55	979	1408	1468	1684	2029	1988	FILL

LEGEND:

- GEOTEXTILE
- EXISTING GEOTECHNICAL TRAIL/PHASE I ROAD
- 28JD-9 HAND DUG TESTPITS
- 200197-TP01 TESTPITS
- WR06-006 GEOCHEMICAL TESTPITS

PROFESSIONAL ENGINEER — YUKON TERRITORY — PAUL J. KNYSH — 07/01/05

NO	DESCRIPTION	BY	DATE
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3	REVISED FOLLOWING GEOTECH REPORT	RH	24/10/06
2	ISSUED FOR TENDER	RH	05/06
1	ISSUED FOR DISCUSSION	RH	05/06

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CHECKED BY: PK	12/01/07
APPROVED BY: RH	12/01/07

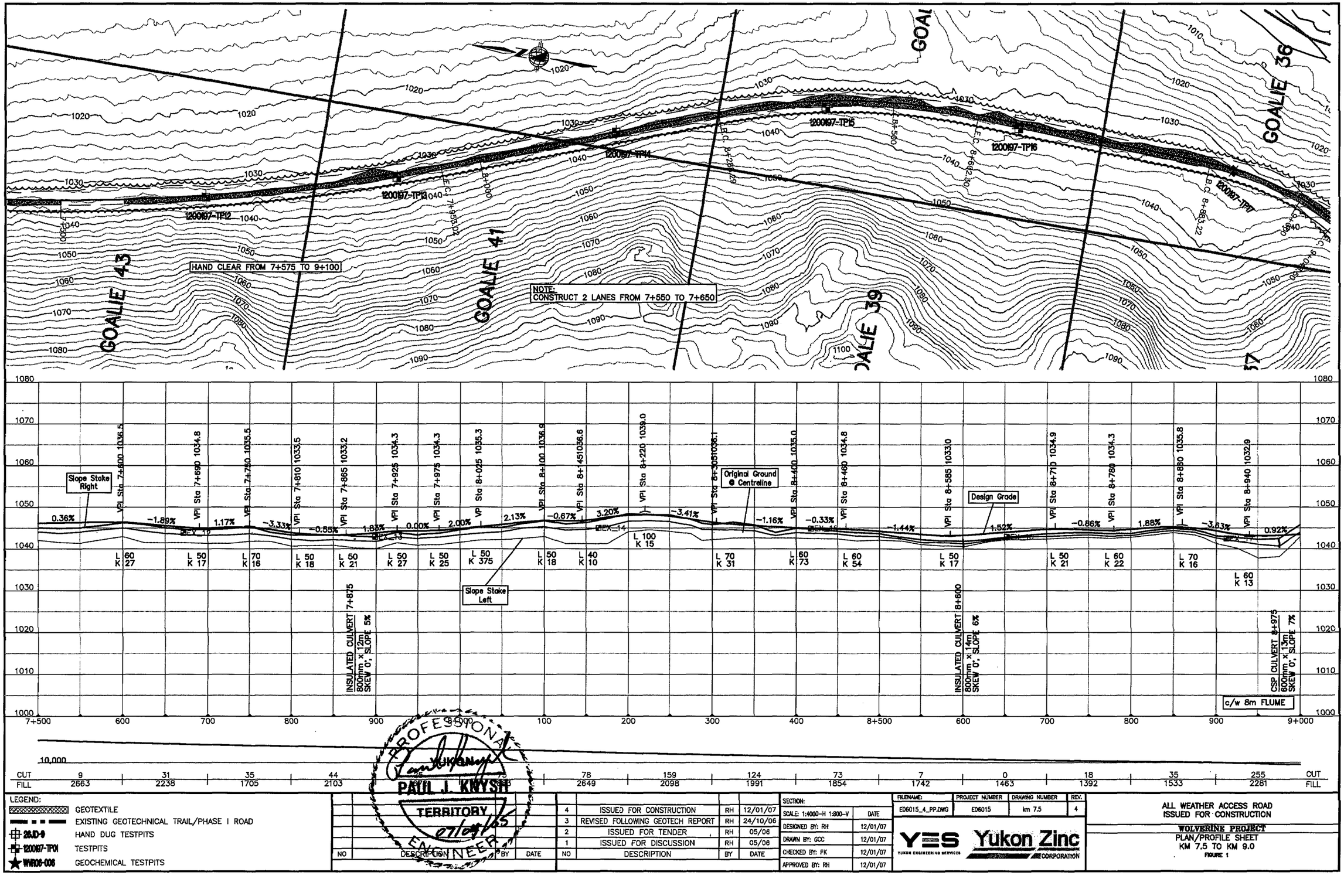
FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
E06015_4_PP.DWG	E06015	km 6	4

YES ENGINEERING SERVICES — YUKON CASINEERING SERVICES — Yukon Zinc CORPORATION

ALL WEATHER ACCESS ROAD
ISSUED FOR CONSTRUCTION

WOLVERINE PROJECT

PLAN/PROFILE SHEET
KM 6.0 TO KM 7.5
FIGURE 1



CUT	9	31	35	44		78	159	124	73	7	0	18	35	255	CUT
FILL	2663	2238	1705	2103		2649	2098	1991	1854	1742	1463	1392	1533	2281	FILL

LEGEND:

- GEOTEXTILE
- EXISTING GEOTECHNICAL TRAIL/PHASE I ROAD
- 26JD-9 HAND DUG TESTPITS
- 1200697-TP01 TESTPITS
- WWR06-006 GEOCHEMICAL TESTPITS

PROFESSIONAL ENGINEER
PAUL J. KWYSH
TERRITORY
07/09/05

NO	DESCRIPTION	BY	DATE
4	ISSUED FOR CONSTRUCTION	RH	12/01/07
3	REVISED FOLLOWING GEOTECH REPORT	RH	24/10/06
2	ISSUED FOR TENDER	RH	05/06
1	ISSUED FOR DISCUSSION	RH	05/06

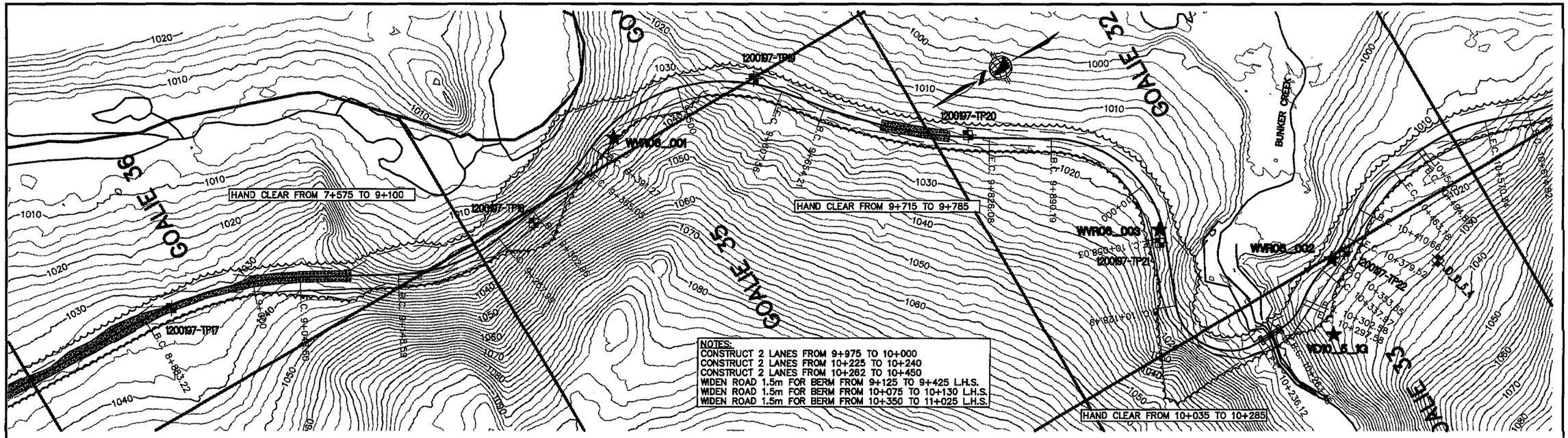
SECTION:	
SCALE: 1:4000–H 1:800–V	DATE
DESIGNED BY: RH	12/01/07
DRAWN BY: GCC	12/01/07
CHECKED BY: PK	12/01/07
APPROVED BY: RH	12/01/07

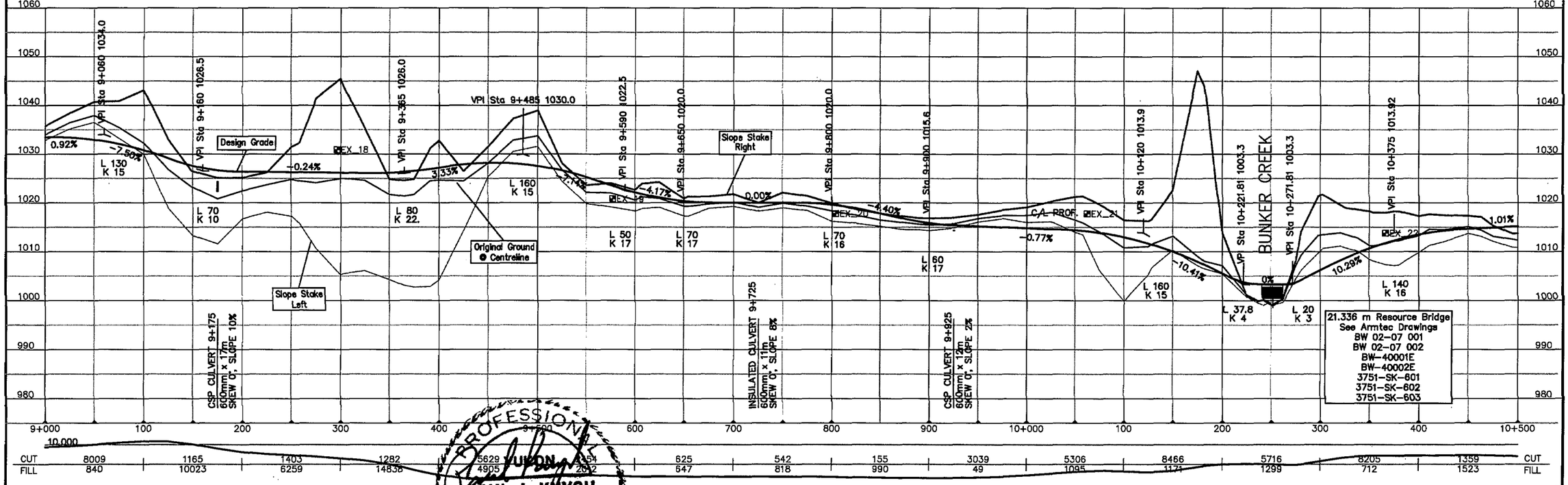
FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
E06015_4_PP.DWG	E06015	km 7.5	4

YES YUKON ENGINEERING SERVICES — Yukon Zinc CORPORATION

ALL WEATHER ACCESS ROAD
ISSUED FOR CONSTRUCTION

WOLVERINE PROJECT
PLAN/PROFILE SHEET
KM 7.5 TO KM 9.0
FIGURE 1





LEGEND:
- GEOTEXTILE
- EXISTING GEOTECHNICAL TRAIL/PHASE I ROAD
- 25JD-9 HAND DUG TESTPITS
- 200197-TP01 TESTPITS
- WWR06-006 GEOCHEMICAL TESTPITS

NO	DESCRIPTION	BY	DATE
4	ISSUED FOR CONSTRUCTION	RH	12/01/07
3	REVISED FOLLOWING GEOTECH REPORT	RH	24/10/06
2	ISSUED FOR TENDER	RH	05/06
1	ISSUED FOR DISCUSSION	RH	05/06

PROFESSIONAL ENGINEER — PAUL J. KNYSH — TERRITORY — 07/09/05

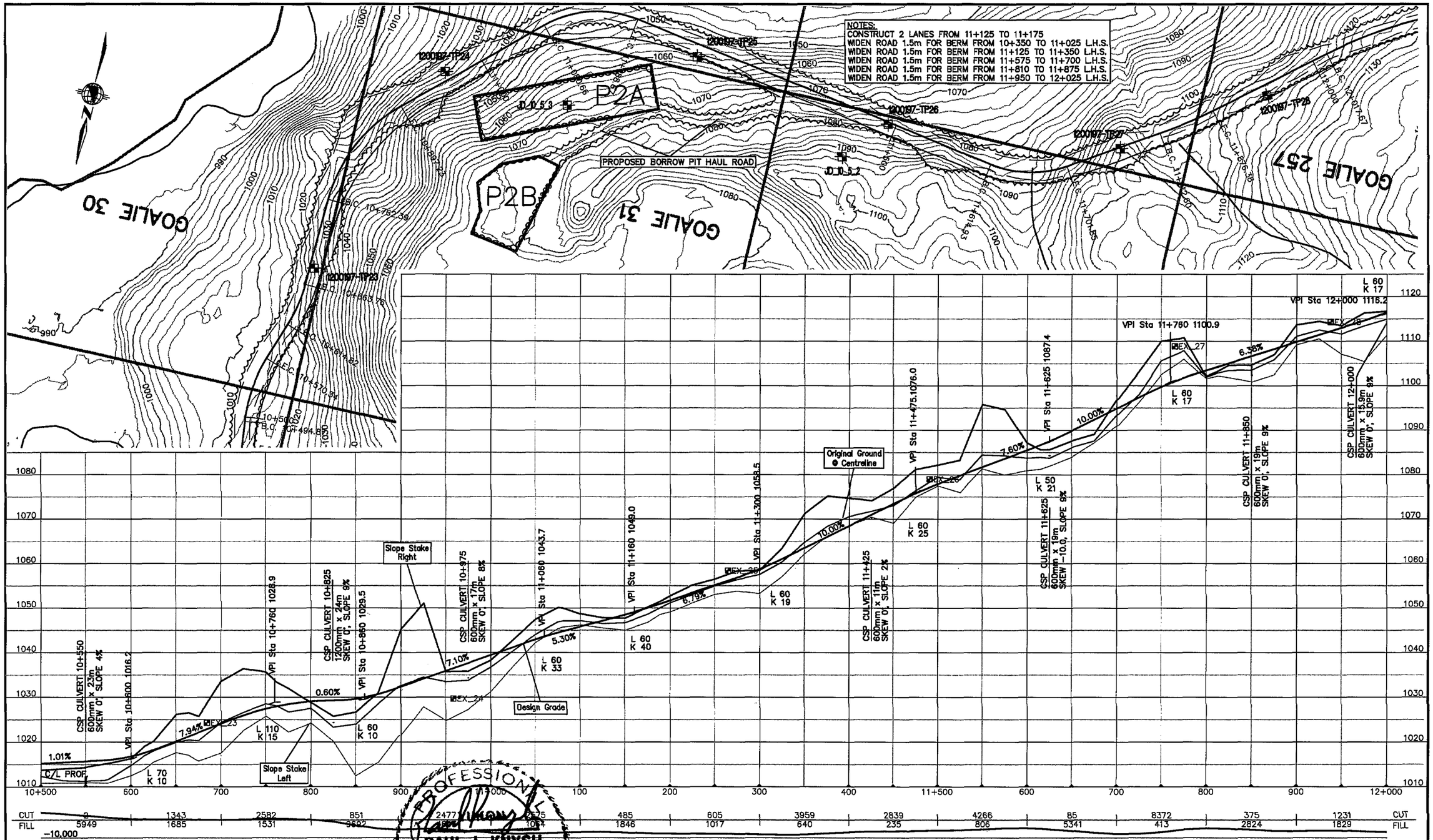
SECTION:	DATE
SCALE: 1:4000–H 1:800–V	
DESIGNED BY: RH	12/01/07
DRAWN BY: GCC	12/01/07
CHECKED BY: PK	12/01/07
APPROVED BY: RH	12/01/07

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
E06015_4_PP.DWG	E06015	km 9	4

YES YUKON ENGINEERING SERVICES — Yukon Zinc CORPORATION

ALL WEATHER ACCESS ROAD
ISSUED FOR CONSTRUCTION

WOLVERINE PROJECT
PLAN/PROFILE SHEET
KM 9.0 TO KM 10.5
FIGURE 1



LEGEND:

- GEOTEXTILE
- EXISTING GEOTECHNICAL TRAIL/PHASE I ROAD
- 2&JD-9 HAND DUG TESTPITS
- 120097-TP01 TESTPITS
- WWR06-006 GEOCHEMICAL TESTPITS

NO	DESCRIPTION	BY	DATE
4	ISSUED FOR CONSTRUCTION	RH	12/01/07
3	REVISED FOLLOWING GEOTECH REPORT	RH	24/10/06
2	ISSUED FOR TENDER	RH	05/06
1	ISSUED FOR DISCUSSION	RH	05/06

PROFESSIONAL ENGINEER — PAUL J. KNYSH — TERRITORY — 07/dec/05

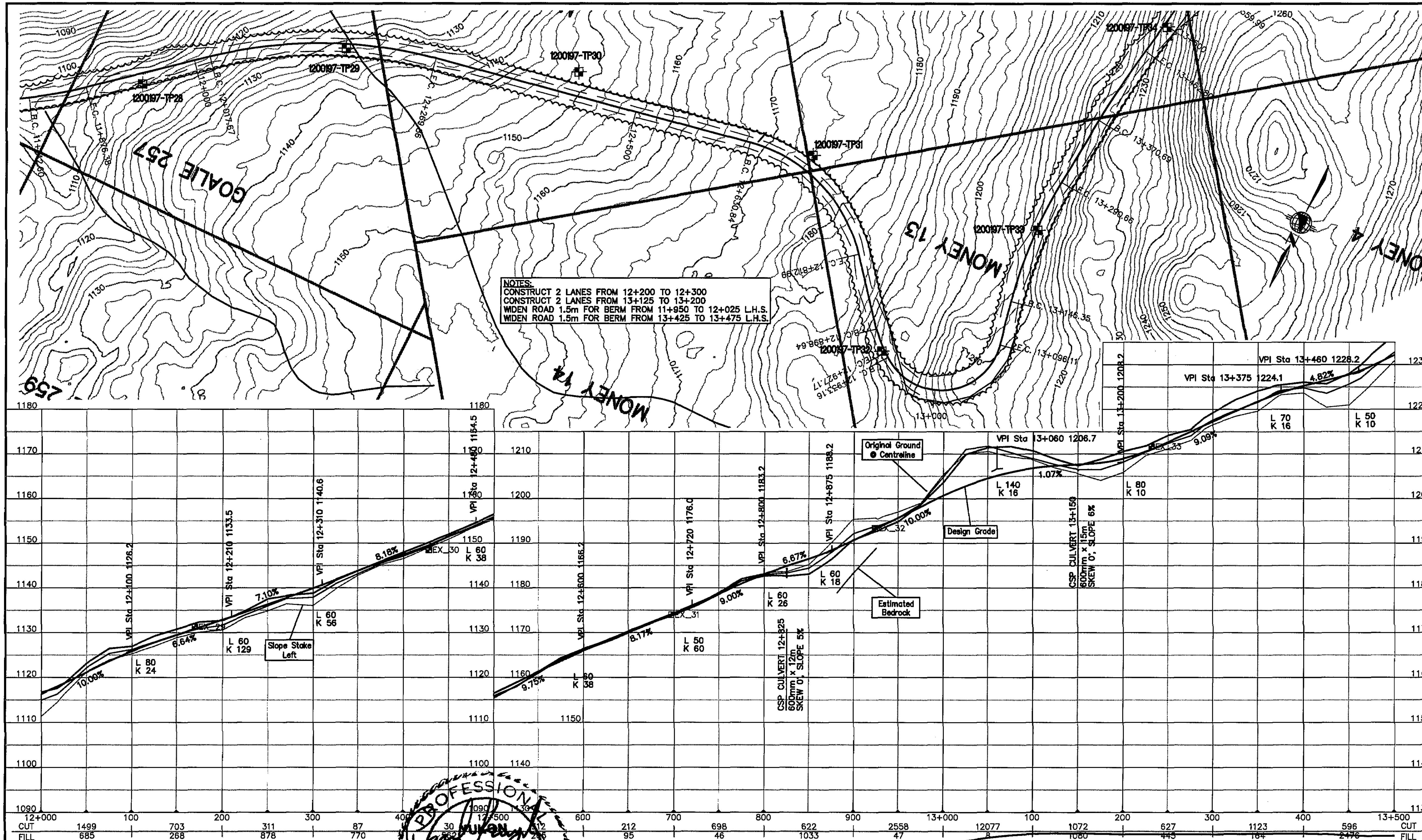
SECTION:	
SCALE: 1:4000–H 1:800–V	DATE
DESIGNED BY: RH	12/01/07
DRAWN BY: GCC	12/01/07
CHECKED BY: PK	12/01/07
APPROVED BY: RH	12/01/07

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
E06015_4_PP.DWG	E06015	km 10.5	4

YES YUKON ENGINEERING SERVICES — Yukon Zinc CORPORATION

ALL WEATHER ACCESS ROAD
ISSUED FOR CONSTRUCTION

WOLVERINE PROJECT
PLAN/PROFILE SHEET
KM 10.5 TO KM 12.0
FIGURE 1



LEGEND:

- GEOTEXTILE
- EXISTING GEOTECHNICAL TRAIL/PHASE I ROAD
- 26JD-9 HAND DUG TESTPITS
- 1200197-TP01 TESTPITS
- WR06-006 GEOCHEMICAL TESTPITS

PAUL J. KNYSH
PROFESSIONAL ENGINEER
YUKON TERRITORY
07/01/15

NO	DESCRIPTION	BY	DATE
4	ISSUED FOR CONSTRUCTION	RH	12/01/07
3	REVISED FOLLOWING GEOTECH REPORT	RH	24/10/06
2	ISSUED FOR TENDER	RH	05/06
1	ISSUED FOR DISCUSSION	RH	05/06

SECTION:	
SCALE: 1:4000-H 1:800-V	DATE
DESIGNED BY: RH	12/01/07
DRAWN BY: GCC	12/01/07
CHECKED BY: PK	12/01/07
APPROVED BY: RH	12/01/07

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
E06015_4_PP.DWG	E06015	km 12	4

YES YUKON ENGINEERING SERVICES

Yukon Zinc CORPORATION

ALL WEATHER ACCESS ROAD
ISSUED FOR CONSTRUCTION

WOLVERINE PROJECT
PLAN/PROFILE SHEET
KM 12.0 TO KM 13.5
FIGURE 1

NOTES:
CONSTRUCT 2 LANES FROM 14+225 TO 14+275
CONSTRUCT 2 LANES FROM 14+975 TO 15+050
WIDEN ROAD 1.5m FOR BERM FROM 13+650 TO 13+800 L.H.S.
WIDEN ROAD 1.5m FOR BERM FROM 13+90 TO 14+075 L.H.S.
WIDEN ROAD 1.5m FOR BERM FROM 14+150 TO 14+825 L.H.S.

HAND CLEAR 14+940 TO 15+000
HAND CLEAR 15+070 TO 15+130

MONEY 2
MONEY 1
MONEY 30
CHIP CREEK

200197-TP35
200197-TP36
WWR06_004
200197-TP37
200197-TP38
200197-TP39
200197-TP40
200197-TP04

P.C. 13+559.95
P.C. 13+597.85
P.C. 13+900.50
P.C. 14+000.00
P.C. 14+046.72
P.C. 14+154.61
P.C. 14+572.10
P.C. 14+655.84
P.C. 14+853.42
P.C. 14+824.35

VPI Sta 13+560 1238.2
VPI Sta 13+700 1245.2
VPI Sta 14+040 1273.6
VPI Sta 14+150 1284.6
VPI Sta 14+250 1289.2
VPI Sta 14+375 1298.5
VPI Sta 14+530 1312.2
VPI Sta 14+675 1326.7
VPI Sta 14+775 1331.2
VPI Sta 14+920 1345.7

Original Ground @ Centreline
Slope Stake Right
Slope Stake Left
Design Grade
Estimated Bedrock

5.00%
9.23%
10%
6.75%
4.60%
8.24%
10.00%
9.18%
4.50%
3.33%

L 80 K 16
L 60 K 14
L 70 K 28
L 80 K 15
L 80 K 16
L 60 K 18
L 60
L 60 K 33
L 90 K 16
L 50 K 10
L 110 K 17

EX_34
EX_35
EX_36
EX_37
EX_38
EX_39
EX_40

CSP CULVERT 13+700
1000mm x 32m
SKEW 0°, SLOPE 13%

CSP CULVERT 14+200
800mm x 17m
SKEW 0°, SLOPE 9%

CSP CULVERT 14+475
800mm x 16m
SKEW 0°, SLOPE 10%

CSP CULVERT 15+000
800mm x 15m
SKEW 0°, SLOPE 9%

	13+500	600	700	800	900	100	200	300	400	14+500	600	700	800	900	15+000
CUT	5209	1450	70	11516		3025	573	1277	2796	104	1884	1509	9651	4775	
FILL	4	4269	11548	85		1814	1411	1508	2486	4436	2547	1023	268	274	
	−10,000														

LEGEND:
- GEOTEXTILE
- EXISTING GEOTECHNICAL TRAIL/PHASE I ROAD
- 28JD-9 HAND DUG TESTPITS
- 200197-TP01 TESTPITS
- WWR06-006 GEOCHEMICAL TESTPITS

PROFESSIONAL ENGINEER
PAUL J. KNYSH
TERRITORY
07/01/06

NO	DESCRIPTION	BY	DATE
4	ISSUED FOR CONSTRUCTION	RH	12/01/07
3	REVISED FOLLOWING GEOTECH REPORT	RH	24/10/06
2	ISSUED FOR TENDER	RH	05/06
1	ISSUED FOR DISCUSSION	RH	05/06

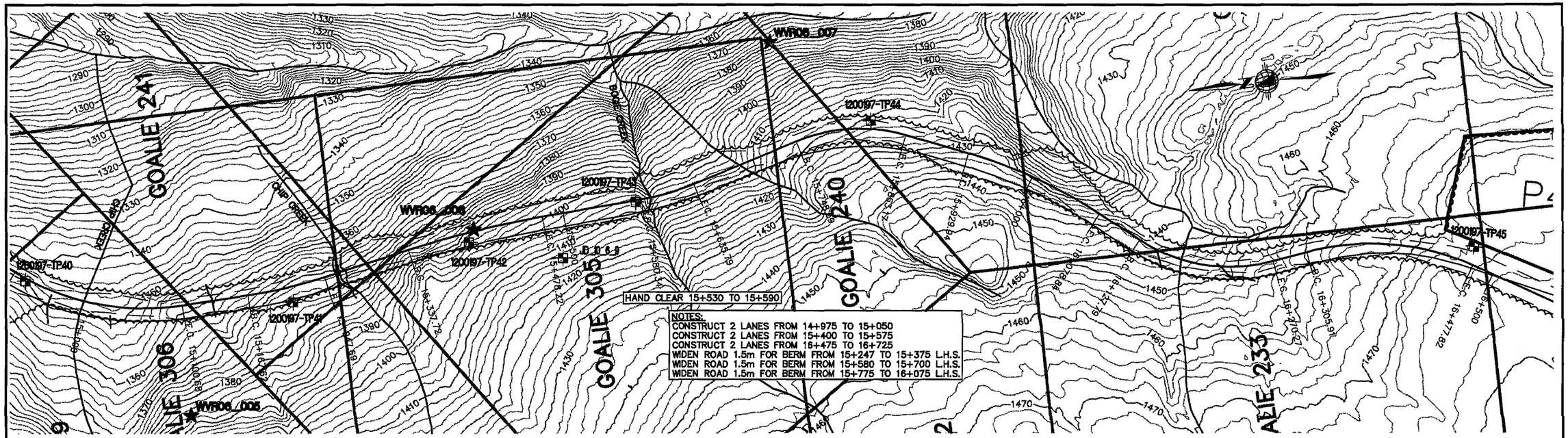
SECTION:	
SCALE: 1:4000–H 1:800–V	DATE
DESIGNED BY: RH	12/01/07
DRAWN BY: GCC	12/01/07
CHECKED BY: PK	12/01/07
APPROVED BY: RH	12/01/07

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
E06015_4_PP.DWG	E06015	km 13.5	4

YES YUKON ENGINEERING SERVICES — Yukon Zinc CORPORATION

ALL WEATHER ACCESS ROAD
ISSUED FOR CONSTRUCTION

WOLVERINE PROJECT
PLAN/PROFILE SHEET
KM 13.5 TO KM 15
FIGURE 1



LEGEND:

- GEOTEXTILE
- EXISTING GEOTECHNICAL TRAIL/PHASE I ROAD
- 2&D-9 HAND DUG TESTPITS
- 120097-TP01 TESTPITS
- WVR06-006 GEOCHEMICAL TESTPITS

NO	DESCRIPTION	BY	DATE
4	ISSUED FOR CONSTRUCTION	RH	12/01/07
3	REVISED FOLLOWING GEOTECH REPORT	RH	24/10/06
2	ISSUED FOR TENDER	RH	05/06
1	ISSUED FOR DISCUSSION	RH	05/06

PROFESSIONAL ENGINEER — YUKON TERRITORY — PAUL J. KNYSH — 07/04/05

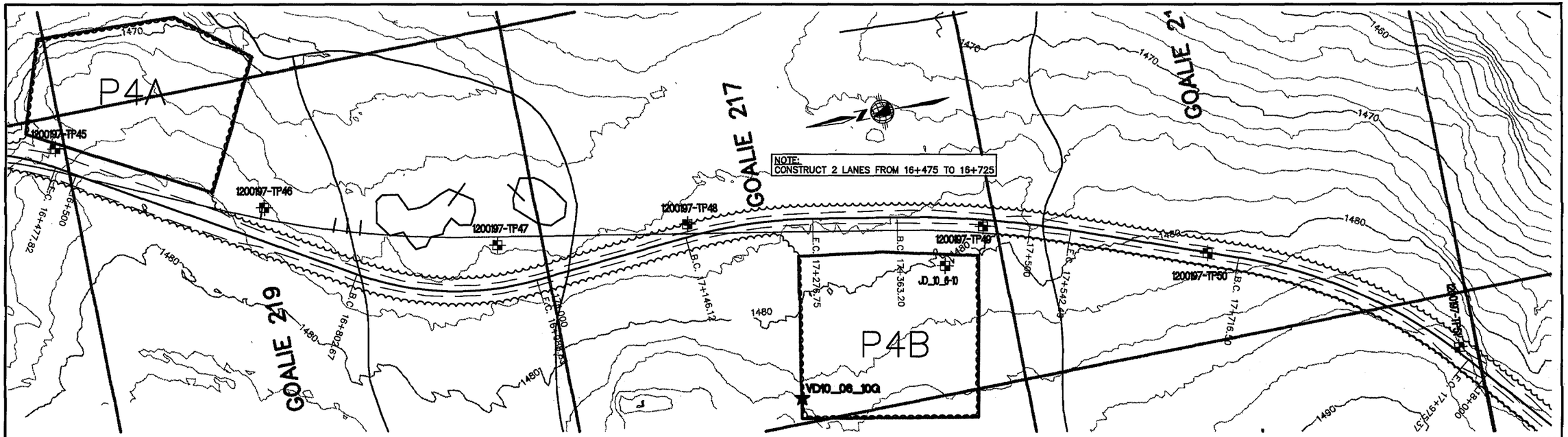
SECTION:	
SCALE: 1:4000–H 1:800–V	DATE
DESIGNED BY: RH	12/01/07
DRAWN BY: GCC	12/01/07
CHECKED BY: PK	12/01/07
APPROVED BY: RH	12/01/07

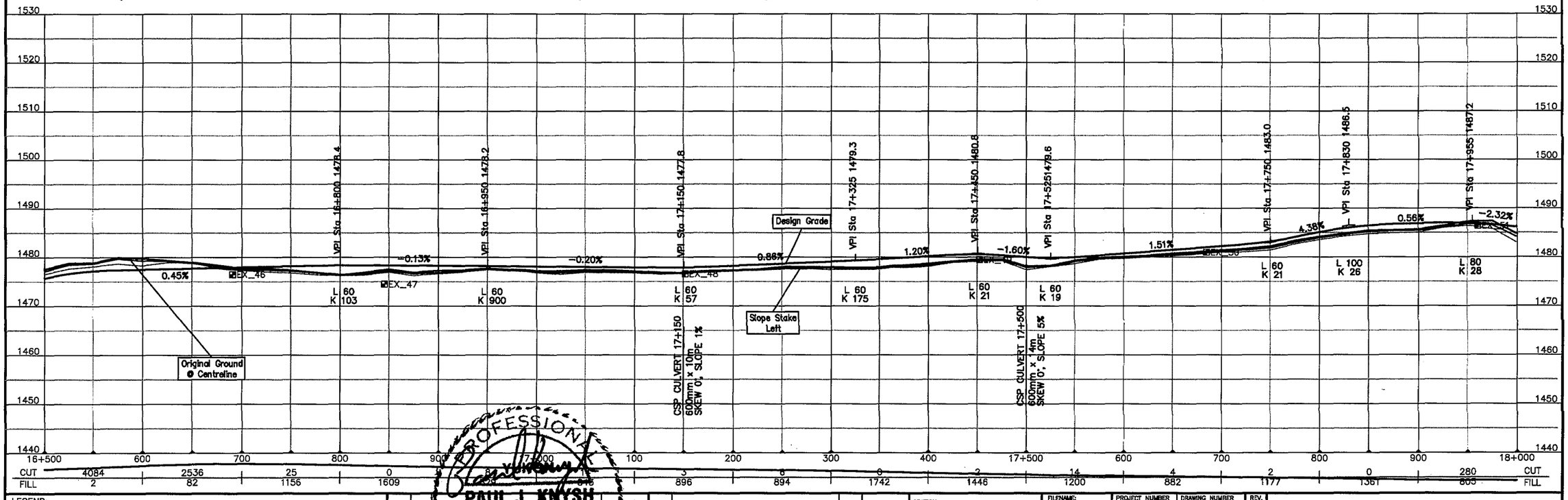
FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
E06015_4_PP.DWG	E06015	km 15	4

YES YUKON ENGINEERING SERVICES — Yukon Zinc CORPORATION

ALL WEATHER ACCESS ROAD
ISSUED FOR CONSTRUCTION

WOLVERINE PROJECT
PLAN/PROFILE SHEET
KM 15 TO KM 16.5
FIGURE 1





LEGEND:

- GEOTEXTILE
- EXISTING GEOTECHNICAL TRAIL/PHASE I ROAD
- 26JD-9 HAND DUG TESTPITS
- 1200197-TP01 TESTPITS
- WRR08-008 GEOCHEMICAL TESTPITS

NO	DESCRIPTION	BY	DATE
4	ISSUED FOR CONSTRUCTION	RH	12/01/07
3	REVISED FOLLOWING GEOTECH REPORT	RH	24/10/06
2	ISSUED FOR TENDER	RH	05/06
1	ISSUED FOR DISCUSSION	RH	05/06

PROFESSIONAL ENGINEER
PAUL J. KNYSH
TERRITORY
07694 95

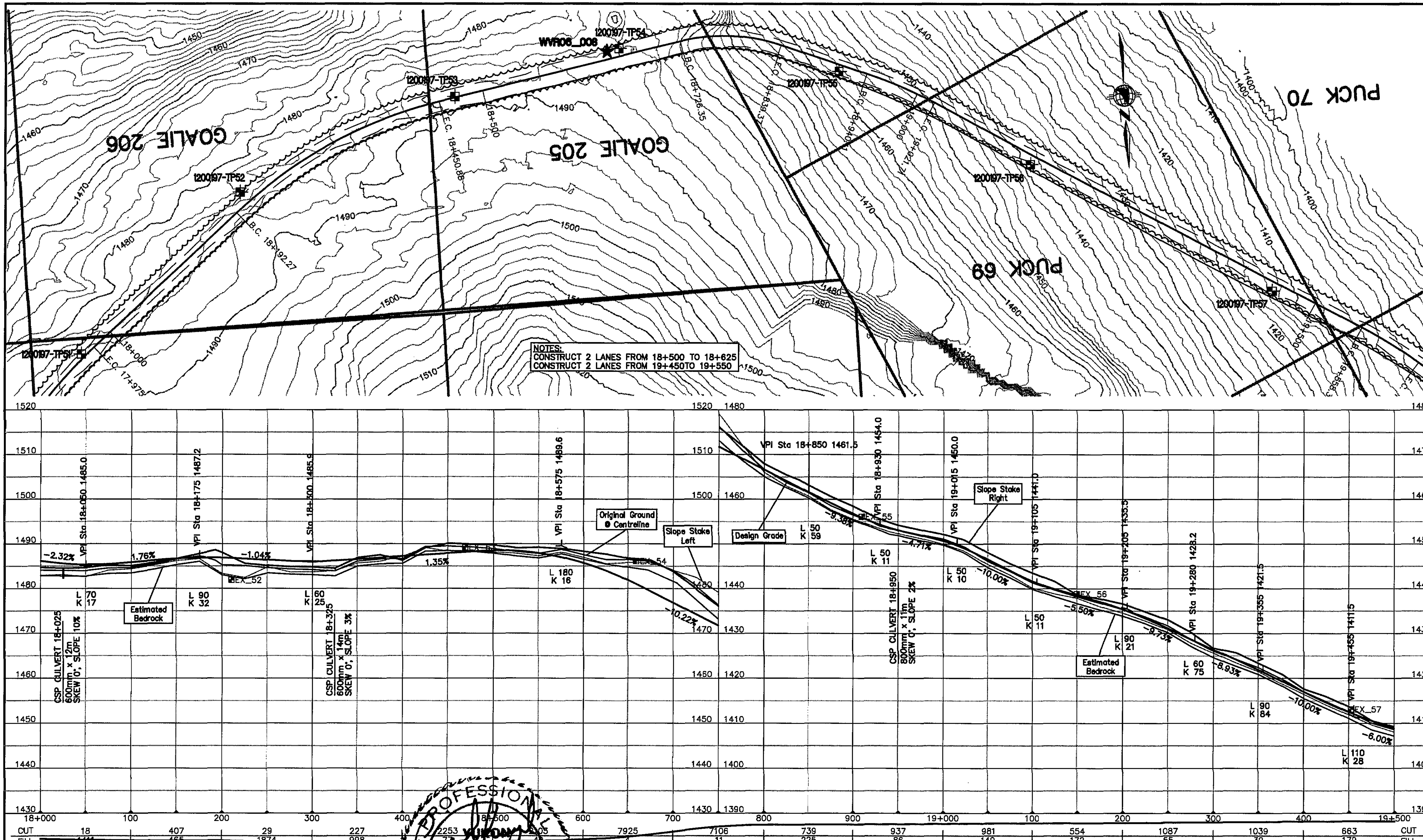
SECTION:	
SCALE: 1:4000-H 1:800-V	DATE
DESIGNED BY: RH	12/01/07
DRAWN BY: GCC	12/01/07
CHECKED BY: PK	12/01/07
APPROVED BY: RH	12/01/07

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
E06015_4_PP.DWG	E06015	km 16.5	4

YES YUKON ENGINEERING SERVICES
Yukon Zinc CORPORATION

ALL WEATHER ACCESS ROAD
ISSUED FOR CONSTRUCTION

WOLVERINE PROJECT
PLAN/PROFILE SHEET
KM 16.5 TO KM 18.0
FIGURE 1



LEGEND:

- GEOTEXTILE
- EXISTING GEOTECHNICAL TRAIL/PHASE I ROAD
- 26JD-9 HAND DUG TESTPITS
- 1200197-TP01 TESTPITS
- WVR06-006 GEOCHEMICAL TESTPITS

PAUL J. KNYSH — PROFESSIONAL ENGINEER — YUKON TERRITORY — 07/04/05

NO	DESCRIPTION	BY	DATE
4	ISSUED FOR CONSTRUCTION	RH	12/01/07
3	REVISED FOLLOWING GEOTECH REPORT	RH	24/10/06
2	ISSUED FOR TENDER	RH	05/06
1	ISSUED FOR DISCUSSION	RH	05/06

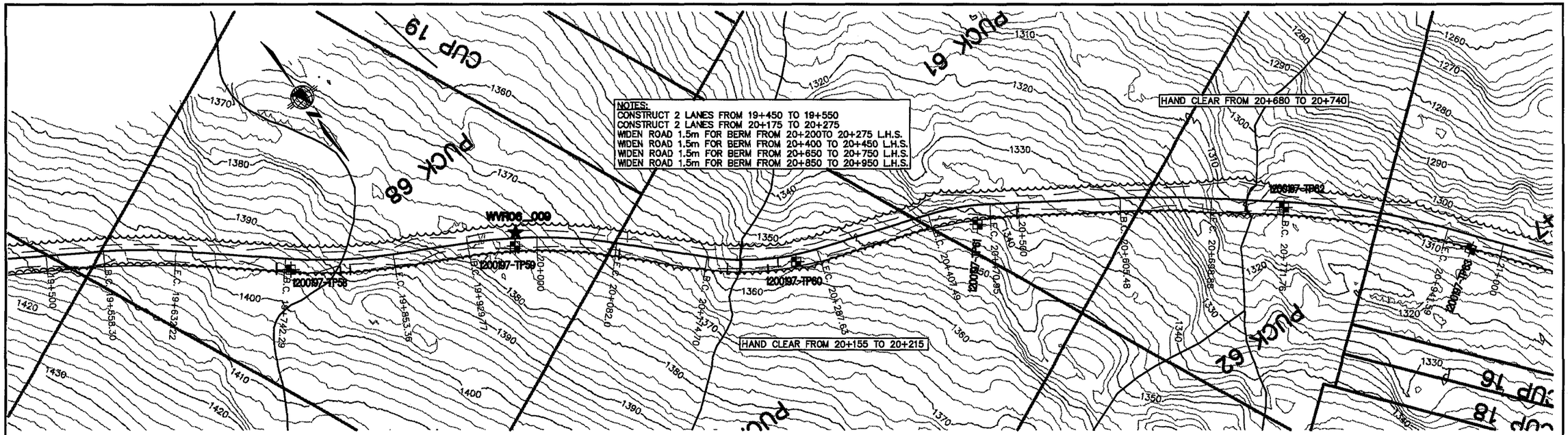
SECTION:	DATE
SCALE: 1:4000-H 1:800-V	
DESIGNED BY: RH	12/01/07
DRAWN BY: GCC	12/01/07
CHECKED BY: PK	12/01/07
APPROVED BY: RH	12/01/07

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
E06015_4_PP.DWG	E06015	km 18	4

YES YUKON ENGINEERING SERVICES — Yukon Zinc CORPORATION

ALL WEATHER ACCESS ROAD
ISSUED FOR CONSTRUCTION

WOLVERINE PROJECT
PLAN/PROFILE SHEET
KM 18.0 TO KM 19.5
FIGURE 1



LEGEND:

- GEOTEXTILE
- EXISTING GEOTECHNICAL TRAIL/PHASE I ROAD
- 26.D-9 HAND DUG TESTPITS
- 120097-TP01 TESTPITS
- WVR06-008 GEOCHEMICAL TESTPITS

NO	DESCRIPTION	DATE

PROFESSIONAL ENGINEER
PAUL J. KNYSH
TERRITORY
07/oct/05

NO	DESCRIPTION	BY	DATE
4	ISSUED FOR CONSTRUCTION	RH	12/01/07
3	REVISED FOLLOWING GEOTECH REPORT	RH	24/10/06
2	ISSUED FOR TENDER	RH	05/06
1	ISSUED FOR DISCUSSION	RH	05/06

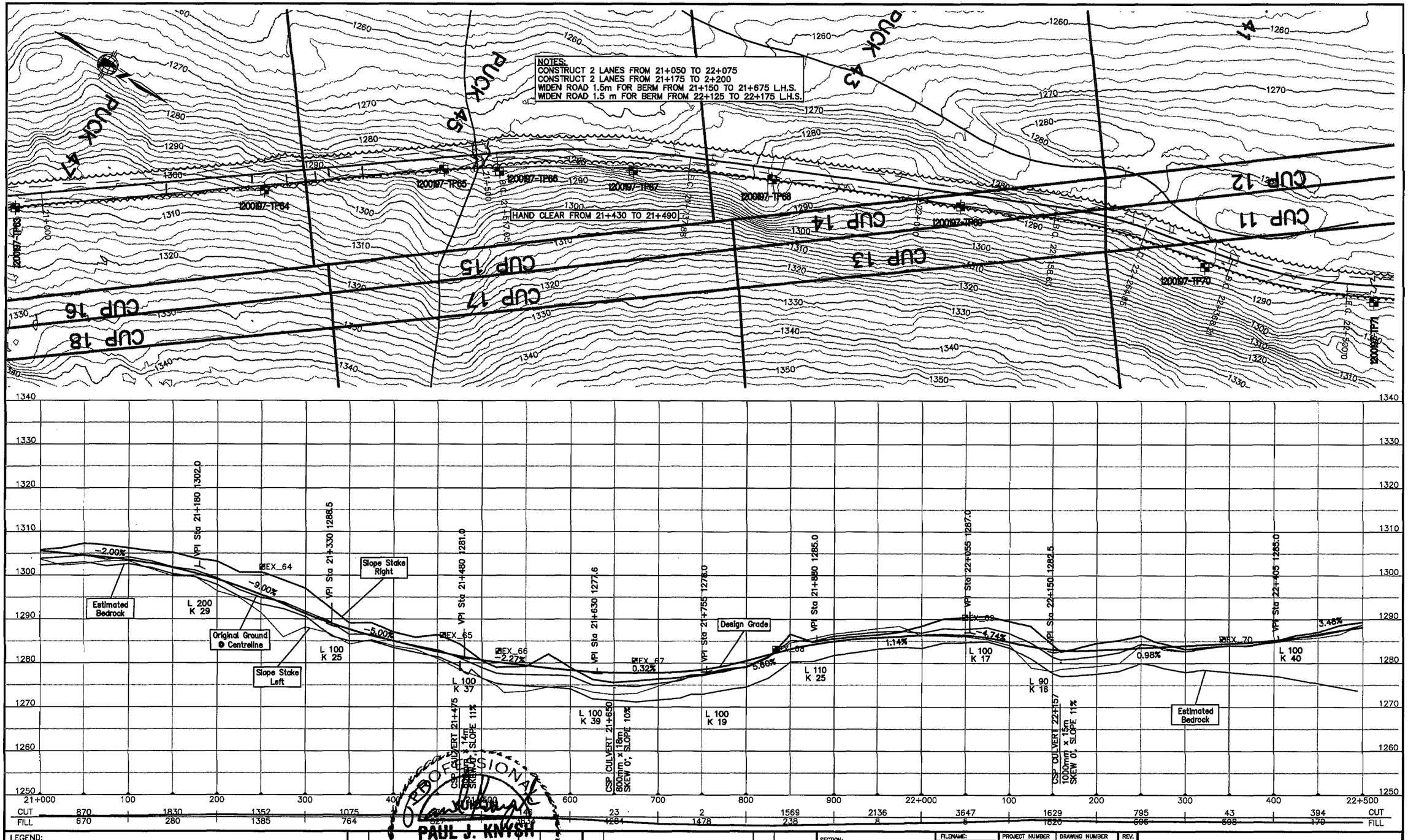
SECTION:	
SCALE: 1:4000-H 1:600-V	DATE
DESIGNED BY: RH	12/01/07
DRAWN BY: GCC	12/01/07
CHECKED BY: PK	12/01/07
APPROVED BY: RH	12/01/07

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
E06015_4_PP.DWG	E06015	km 19.5	4

YES YUKON ENGINEERING SERVICES — Yukon Zinc CORPORATION

ALL WEATHER ACCESS ROAD
ISSUED FOR CONSTRUCTION

WOLVERINE PROJECT
PLAN/PROFILE SHEET
KM 19.5 TO KM 21.0
FIGURE 1



LEGEND:

- GEOTEXTILE
- EXISTING GEOTECHNICAL TRAIL/PHASE I ROAD
- 26JD-9 HAND DUG TESTPITS
- 200197-TP01 TESTPITS
- WWR06-006 GEOCHEMICAL TESTPITS

NO	DESCRIPTION	BY	DATE
4	ISSUED FOR CONSTRUCTION	RH	12/01/07
3	REVISED FOLLOWING GEOTECH REPORT	RH	24/10/06
2	ISSUED FOR TENDER	RH	05/06
1	ISSUED FOR DISCUSSION	RH	05/06

PROFESSIONAL ENGINEER — PAUL J. KNYSH — TERRITORY — 07/04/05

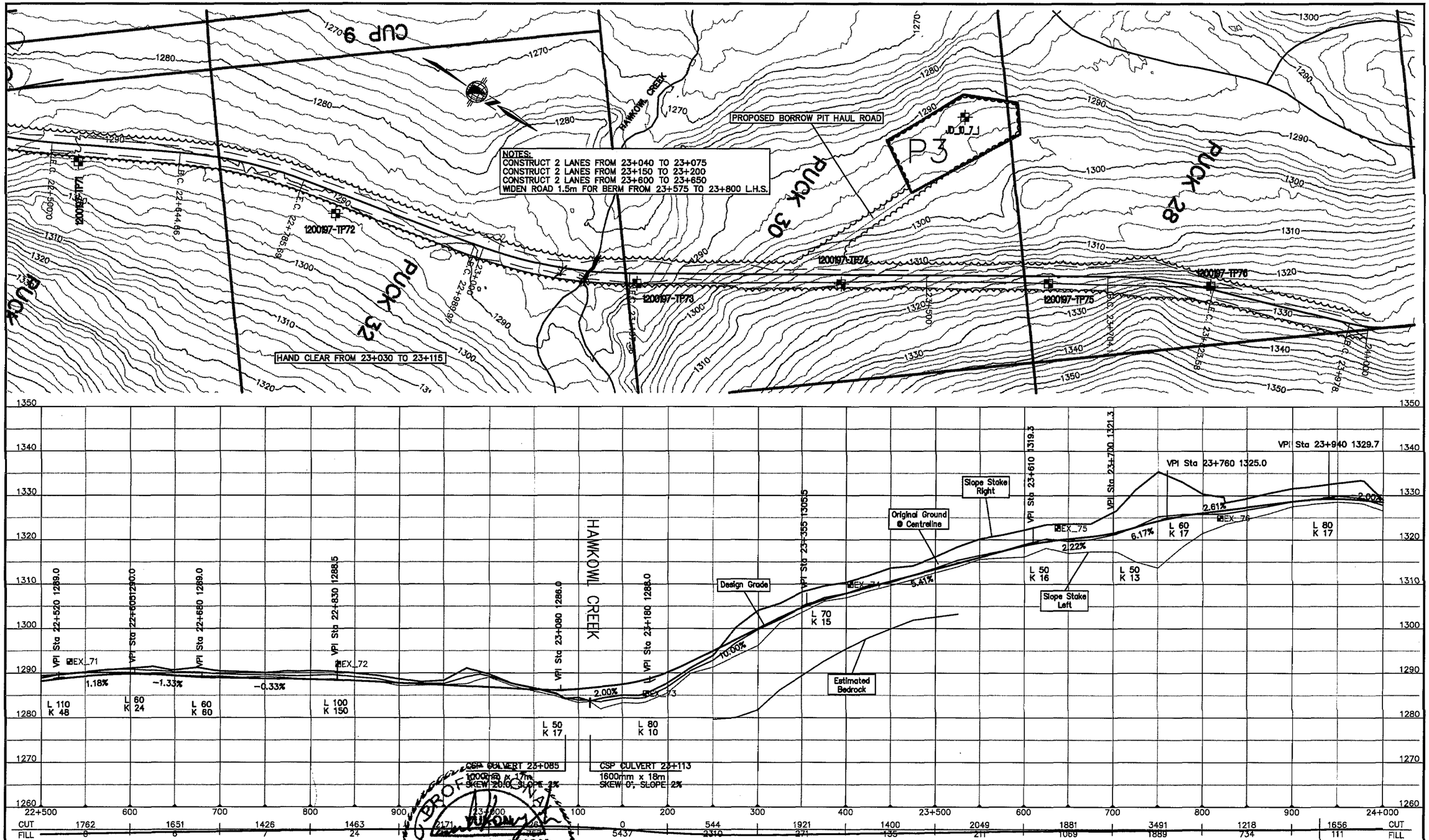
SECTION:	
SCALE: 1:4000-H 1:800-V	DATE
DESIGNED BY: RH	12/01/07
DRAWN BY: GCC	12/01/07
CHECKED BY: PK	12/01/07
APPROVED BY: RH	12/01/07

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
E06015_4_PP.DWG	E06015	km 21	4

YES YUKON ENGINEERING SERVICES — Yukon Zinc CORPORATION

ALL WEATHER ACCESS ROAD
ISSUED FOR CONSTRUCTION

WOLVERINE PROJECT
PLAN/PROFILE SHEET
KM 21.0 TO KM 22.5
FIGURE 1



LEGEND:

- GEOTEXTILE
- EXISTING GEOTECHNICAL TRAIL/PHASE I ROAD
- 25.D-9 HAND DUG TESTPITS
- 1200197-TP01 TESTPITS
- WR06-006 GEOCHEMICAL TESTPITS

NO	DESCRIPTION	BY	DATE
4	ISSUED FOR CONSTRUCTION	RH	12/01/07
3	REVISED FOLLOWING GEOTECH REPORT	RH	24/10/06
2	ISSUED FOR TENDER	RH	05/06
1	ISSUED FOR DISCUSSION	RH	05/06

PROFESSIONAL ENGINEER — YUKON TERRITORY — PAUL J. KNYSH — 27/04/05

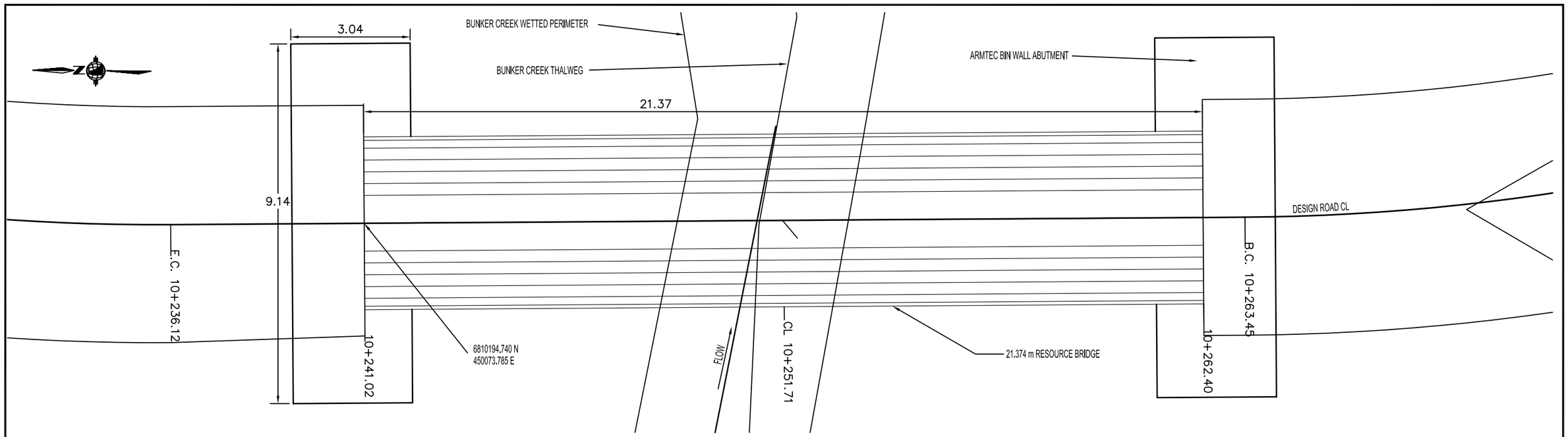
SECTION:	
SCALE: 1:4000–H 1:800–V	DATE
DESIGNED BY: RH	12/01/07
DRAWN BY: GCC	12/01/07
CHECKED BY: PK	12/01/07
APPROVED BY: RH	12/01/07

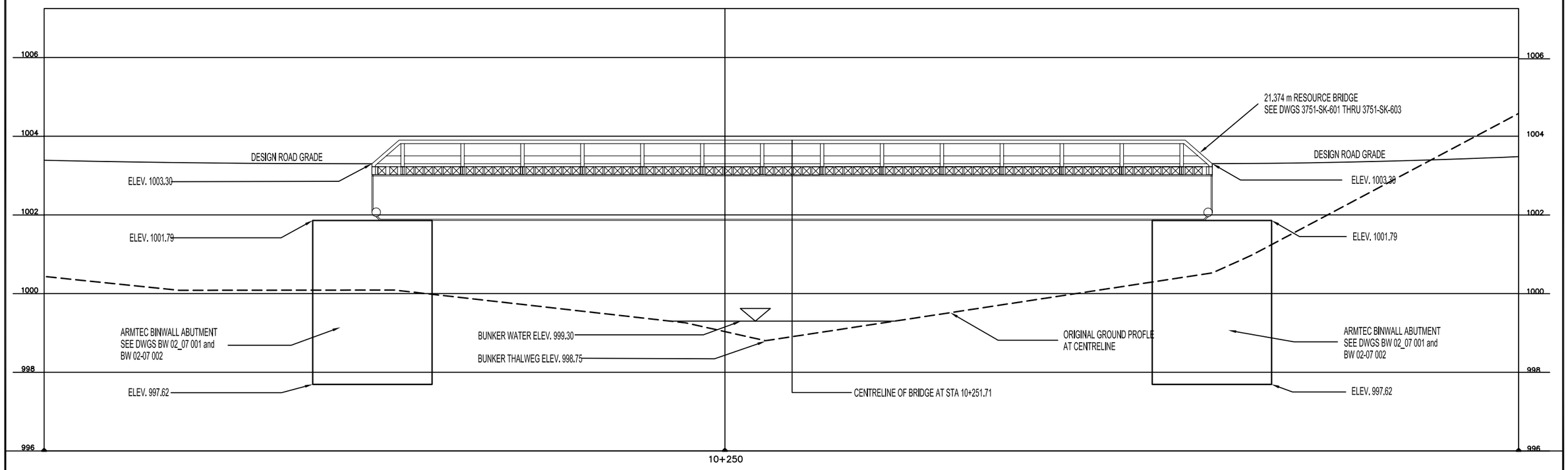
FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
E05015_4_PP.DWG	E05015	km 22.5	4

YES YUKON ENGINEERING SERVICES — Yukon Zinc CORPORATION

ALL WEATHER ACCESS ROAD
ISSUED FOR CONSTRUCTION

WOLVERINE PROJECT
PLAN/PROFILE SHEET
KM 22.5 TO KM 24.0
FIGURE 1





LEGEND:

- GEOTEXTILE
- EXISTING GEOTECHNICAL TRAIL/PROPOSED WINTER ROAD
- 26JD-9 HAND DUG TESTPITS
- 1200197-TP01 TESTPITS
- WVR06-006 GEOCHEMICAL TESTPITS

NO	DESCRIPTION	BY	DATE
1	ISSUED FOR DISCUSSION	EWN	01/07

SECTION:	
SCALE: 1:100	DATE
DESIGNED BY: EWN	12/01/07
DRAWN BY: EWN	12/01/07
CHECKED BY: PK	12/01/07
APPROVED BY: EG	12/01/07

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
BUNKER.DWG	E06015	BRIDGE PP	1

YES YUKON ENGINEERING SERVICES — Yukon Zinc CORPORATION

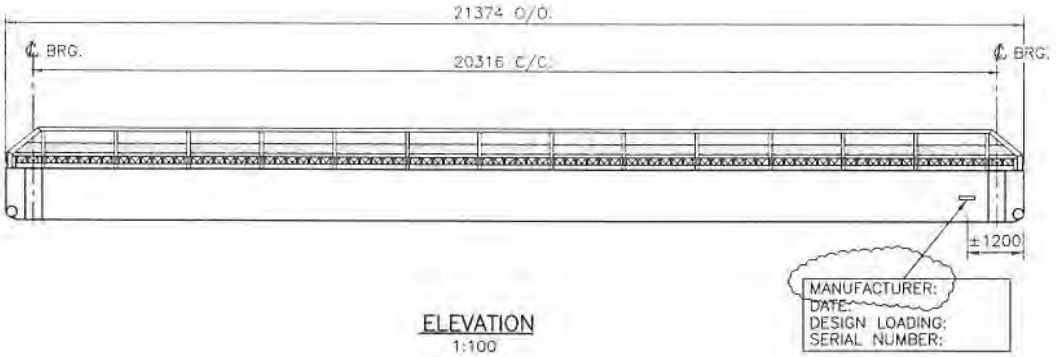
ALL WEATHER ACCESS ROAD
ISSUED FOR CONSTRUCTION

WOLVERINE PROJECT

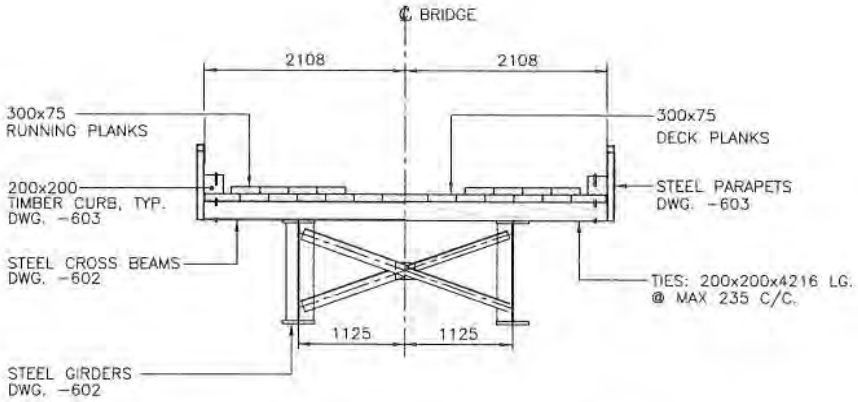
PLAN/PROFILE SHEET
BUNKER CK BRIDGE

AUTOCADD DRAWING No. 3751-601

X-REF. ATTACHMENTS:



ELEVATION
1:100

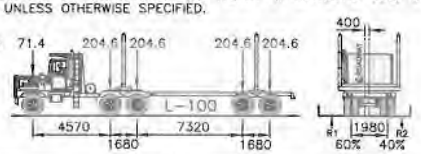


1/2 DIAPHRAGM SECTION
1:50

1/2 TYPICAL SECTION
1:50

NOTES

1. FOR INSTALLATION BY OTHERS, ONTO SUBSTRUCTURE BY OTHERS, NO RESPONSIBILITY CAN BE ACCEPTED FOR WORK BY OTHERS.
2. DESIGN: CAN/CSA-S6-88 (MODIFIED).
   LOADING: L100 (90,680kg. G.V.W.) e=400, DIST.=60/40.
3. DESIGN LIFE: 50 YEARS (EXCEPT DECK).
4. FATIGUE: 500,000 CYCLES.
5. STEEL: CSA G40.21M GRADE 350AT CAT. 3 (PLATE)
   GRADE 350A (ANGLES)
   GRADE 350W (HSS & W-SECTIONS)
   FABRICATE GIRDERS AS FRACTURE CRITICAL MEMBERS.
   NON-WEATHERING STEEL SECTIONS TO BE PAINTED USING APPROVED PAINT SYSTEM
6. WELDING: CSA W59, WELDS TO BE 6mm FILLET WELDS U/N., X-RAY TENSION FLANGE BUTT WELDS, STEEL FABRICATORS SHALL BE QUALIFIED TO CSA W47.1, DIV. 1 OR DIV. 2
7. PIPE: ASTM A252 GRADE 2.
8. BOLTS: ASTM A325 TYPE 3 M22 U/N. JOB INSPECTION TORQUE 810 Nm
9. DECK HARDWARE: HOT DIP GALVANIZED OR GRADE 350A, BOLTS ASTM A307 GALVANIZED.
10. DECK CONSTRUCTION: TO MOF DWG. NOS. ENG-94-1-01,02,04 EXCEPT AS NOTED.
11. TIMBER: SPF NO. 2 GRADE OR BETTER, ROUGH SAWN. TIES AND DECK PLANKS TO BE CCA TREATED; CURBS & RUNNING PLANKS, UNTREATED.
12. BRIDGE IDENTIFICATION: THE BRIDGE SHALL HAVE ITS LOAD RATING, DATE OF MANUFACTURE, MANUFACTURER'S NAME, AND THE SERIAL NUMBER CLEARLY STAMPED ON. PLATE FIXED TO ONE SIDE OF THE STRUCTURE. THE HEIGHT OF LETTERING USED SHALL BE A MINIMUM OF 60mm UNLESS OTHERWISE SPECIFIED.
13. DESIGN TRUCK:



PERMIT TO PRACTICE
ASSOCIATED ENGINEERING ALBERTA LTD.
Signature
Date
PERMIT NUMBER P 3979
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

REV	DATE Y	M	D	REVISION DESCRIPTION	ENG	DWN
1	00	10	31	PARAPET END & DECK LENGTH REV'D	TA	FZ
2	04	01	05	UPDATED TITLE & DIM REV'D	M.S.	P.L.
3	04	09	27	GENERAL REVISION	AY	CKL

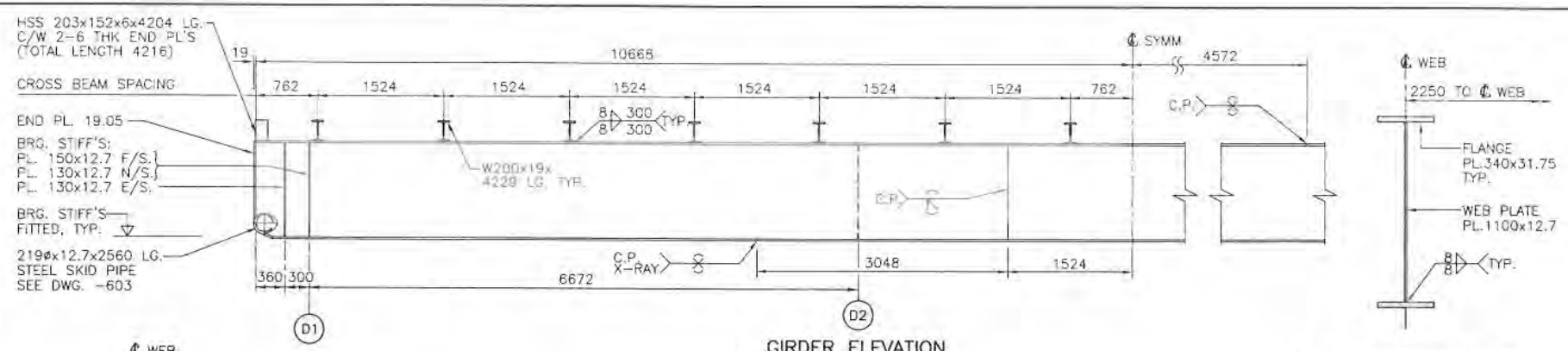
21.336m OILFIELD PORTABLE
GENERAL ARRANGEMENT

ASSOCIATED ENGINEERING

DESIGN:	M.R.S.
CHECK:	M.G.J.
DRAWN:	M.D-J
DATE:	JANUARY 2004
SCALE:	AS SHOWN
JOB No.	993751
DWG. No.	3751-SK-601
	3

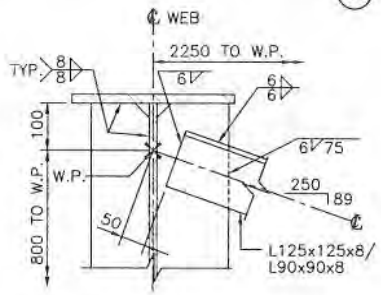
ALL DRAWINGS SUPERSEDED PRIOR TO REVISION

AUTOCAD DRAWING No. 375x15SK602.dwg

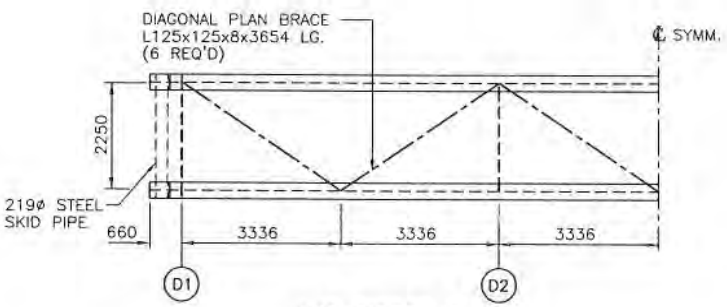


GIRDER ELEVATION
1:50

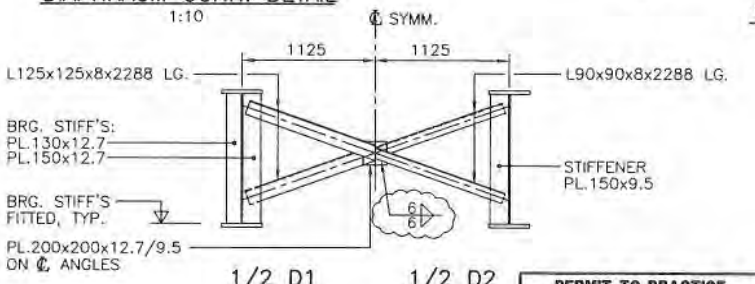
TYP. GIRDER SECTION
1:25



DIAPHRAGM CONN. DETAIL
1:10



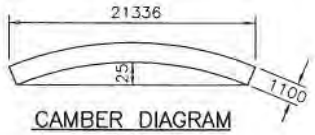
1/2 GIRDER PLAN
NTS



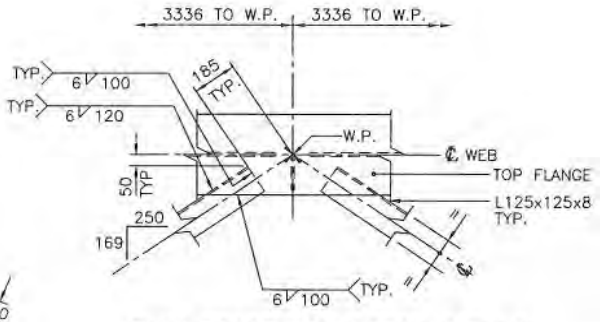
1/2 D1
(2 REQ'D)

1/2 D2
(2 REQ'D)

DIAPHRAGM DETAILS
1:40



CAMBER DIAGRAM
N.T.S.



PLAN BRACE CONNECTION DETAILS
1:20

PERMIT TO PRACTICE
ASSOCIATED ENGINEERING ALBERTA LTD.
Signature _____
Date _____
PERMIT NUMBER: P 3979
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

REV	DATE Y	M	D	REVISION DESCRIPTION	ENG	DWN
1	00	06	20	END PL'S ADDED	SR	FZ
2	00	10	19	END CROSS BEAM REV'D	TA	FZ
3	04	01	05	UPDATED TITLE	M.S.	P.L.
4	04	09	27	GENERAL REVISION	AY	CKL
5	04	12	14	FILLER PLATE WELD	AY	AY

21.336m OILFIELD PORTABLE
STEEL GIRDER DETAILS – SHT.1

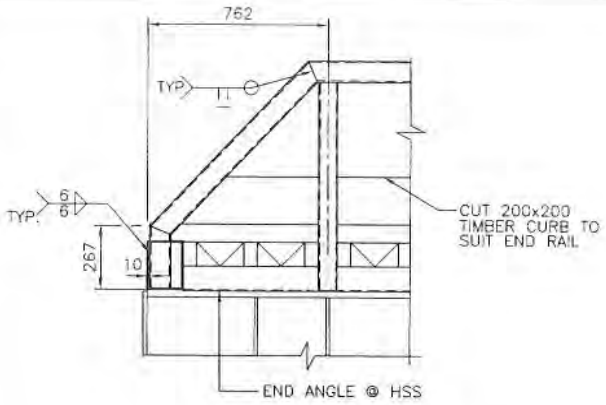
ASSOCIATED ENGINEERING

ALL DRAWINGS SUPERCEEDED PRIOR TO REVISION 5

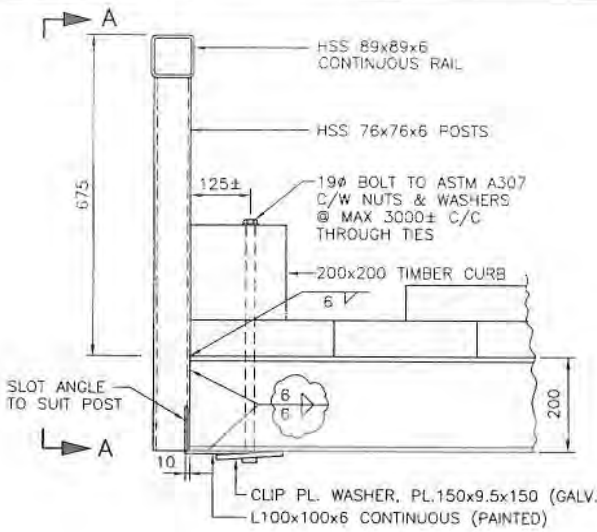
DESIGN:	M.R.S.
CHECK:	SC
DRAWN:	M.D-J
DATE:	JANUARY 2004
SCALE:	AS SHOWN
JOB No.	993751
DWG. No.	3751-SK-602
	5

X-REF. ATTACHMENTS:

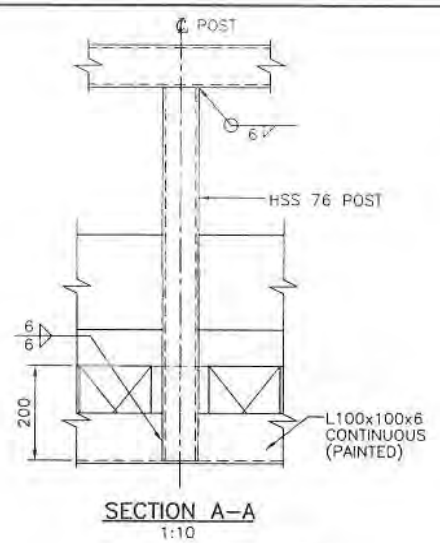
AUTOCADD DRAWING No. 3751SK603.dwg



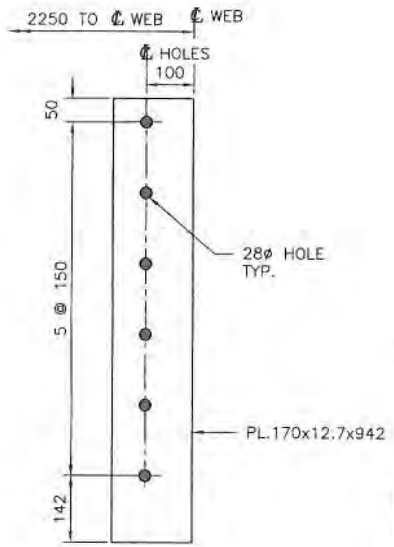
PARAPET DETAIL AT ENDS
1:20



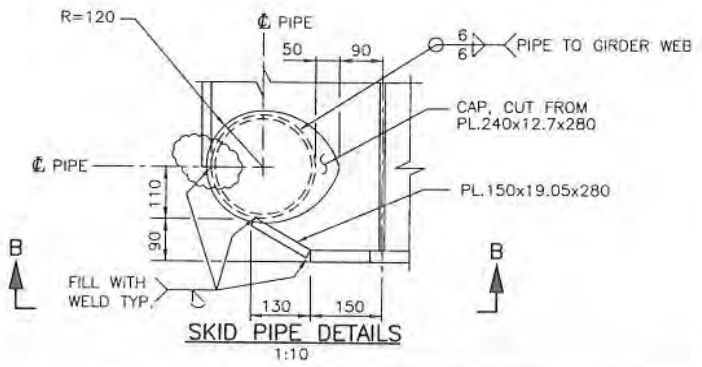
PARAPET DETAIL
1:10



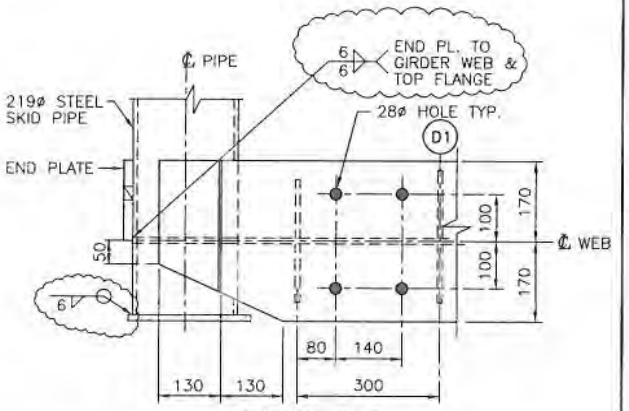
SECTION A–A
1:10



END PLATE DETAIL
1:10 (4 REQ'D)



SKID PIPE DETAILS
1:10



SECTION B–B
1:10

PERMIT TO PRACTICE
ASSOCIATED ENGINEERING ALBERTA LTD.
Signature
Date
PERMIT NUMBER: P 3979
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

REV	DATE Y	M	D	REVISION DESCRIPTION	ENG	DWN
1	00	06	16	PARAPET DETAIL	TA	MD
2	00	06	22	PARAPET END REV'D	SR	FZ
3	00	10	19	PARAPET END REV'D	TA	FZ
4	04	01	05	UPDATED TITLE	M.S.	P.L.
5	04	09	27	GENERAL REVISION	AY	CKL

21.336m OILFIELD PORTABLE
STEEL GRIDER DETAILS – SHT.2

ASSOCIATED ENGINEERING

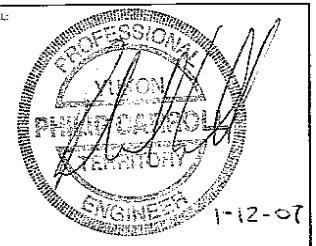
ALL DRAWINGS SUPERSEDED PRIOR TO REVISION 5

DESIGN:	M.R.S.
CHECK:	SC
DRAWN:	M.D–J
DATE:	JANUARY 2004
SCALE:	AS SHOWN
JOB No.	993751
DWG. No.	3751–SK–603
	5

X-REF. ATTACHMENTS:

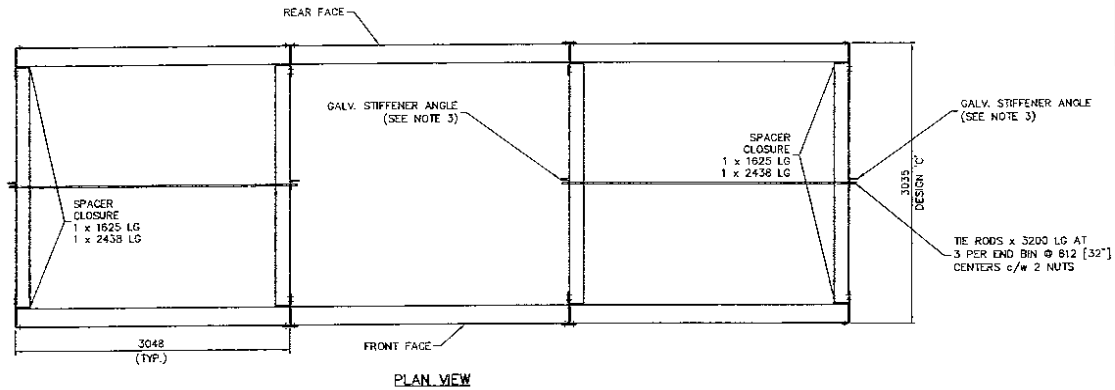
PRELIMINARY
NOT FOR FINAL DESIGN OR CONSTRUCTION PURPOSES

ENGINEER'S SEAL:

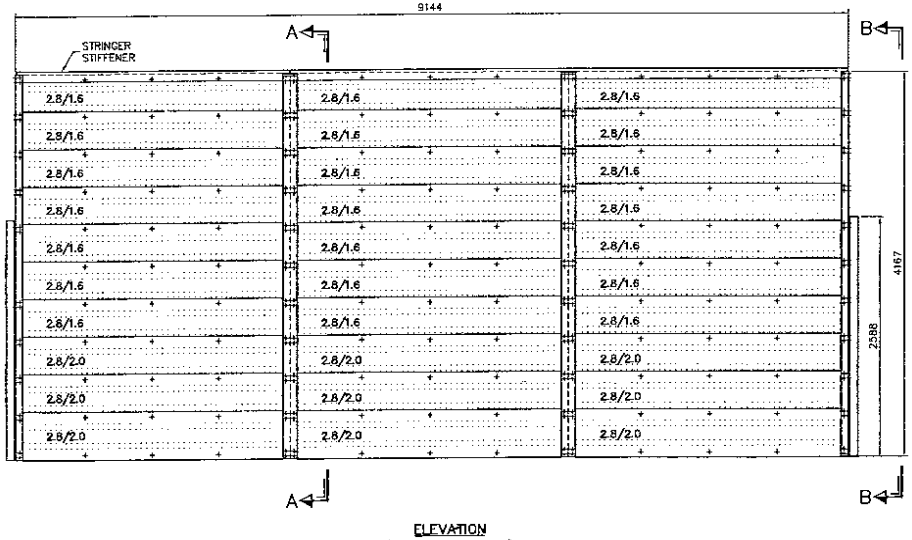


THE ENGINEER'S SEAL CERTIFIES THE ARMTEC BIN-TYPE RETAINING WALL TO BE ADEQUATE AS A GRAVITY RETAINING WALL. THIS SEAL DOES NOT CERTIFY THE BINS AGAINST FAILURE DUE TO EXCESS DIFFERENTIAL SETTLEMENT, FAULTY INSTALLATION OR GLOBAL INSTABILITY.

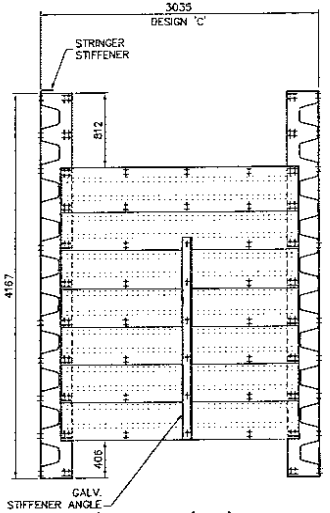
PLEASE NOTE THIS DRAWING IS PRELIMINARY IN NATURE AND ADDITIONAL STRUCTURAL DETAILS WILL BE ADDED UPON PREPARATION OF APPROVAL DRAWINGS AFTER RECEIPT OF ORDER.



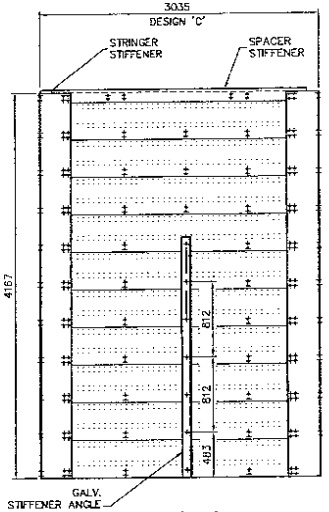
PLAN VIEW



ELEVATION
(FRONT FACE OF WALL)



SECTION 'A-A'



VIEW 'B-B'

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED.
2. ALL STRINGER THICKNESSES ARE AS NOTED ON ELEVATION VIEW
   ie 2.8/1.6
   - 1.6 — REAR STRINGER
   - 2.8 — FRONT STRINGER
3. FIELD ENLARGE HOLES IN END SPACERS FOR TIE RODS USING STIFFENER ANGLE AS TEMPLATE.

REFERENCE DWGS:

BW-40001 STANDARD DETAILS & COMPONENTS
BW-40002 STANDARD DEPTH & HEIGHT COMBINATIONS

NO.	DATE	DESCRIPTION OF REVISION	BY	CK'D
0	07/01/11	ISSUED FOR COMMENTS	DL	KA

BUNKER CREEK

BIN-WALL BRIDGE ABUTMENT
DESIGN 'C' (3035 DEEP)
4167 HIGH x 9144 WIDE

DATE 07/01/09
DRAWN D. LOWE
CHECKED K. AIRD
REVIEWED
SCALE N.T.S.
TAG NO.
INQUIRY NO. BW-02-07

armtec

QUANTITY 2
WT

DRAWING NO. BW 02-07 001 REV 0
SHEET 1 OF 2

INSTALLATION INSTRUCTIONS

THESE INSTALLATION INSTRUCTIONS ARE INTENDED TO BE USED IN CONJUNCTION WITH THE ENGINEER'S SPECIFICATIONS AND DRAWINGS.

BACKFILL INSTRUCTIONS

1) BACKFILL MATERIAL TO BE WELL-GRADED FREE-DRAINING GRANULAR 'B' MATERIAL.

2) BACKFILL SHOULD BE PLACED IN 200 mm LAYERS (MAX) AND COMPACTED TO 95 PERCENT STANDARD PROCTOR DENSITY.

3) THE HEIGHT OF BACKFILL INSIDE THE BINS SHOULD BE AT LEAST 400 mm GREATER THAN THE BACKFILL BEHIND THE BINS DURING THE BACKFILLING OPERATION.

4) FILL ALL CORRUGATIONS IN SPACERS AND STRINGERS, BUT CARE MUST BE EXERCISED TO AVOID DAMAGING THE STRINGERS WITH DUMPING OR COMPACTING EQUIPMENT, WHICH SHOULD BE KEPT AT LEAST 300 mm FROM THE FRONT STRINGERS.

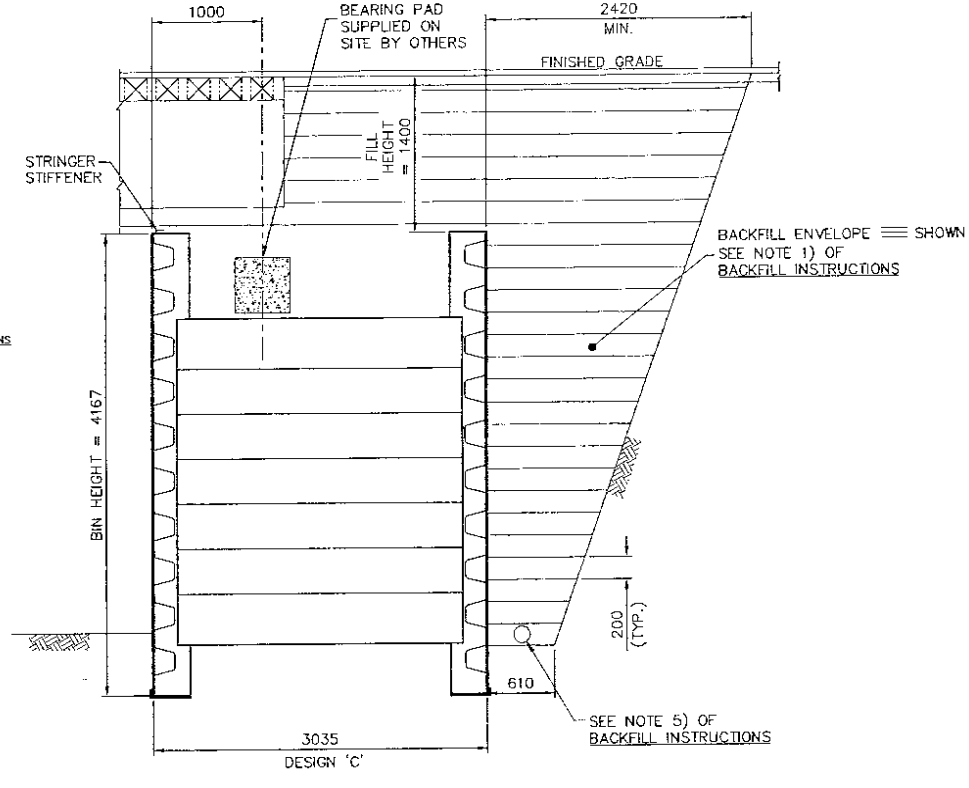
5) IT IS RECOMMENDED TO INSTALL A CONTINUOUS 250 mm DIA. x 1.6 mm PERFORATED CSP c/w FILTER SOCK BEHIND ALL WALLS.

6) A MINIMUM CUSHION ARCH OF 200 mm THICK NON-COMPACTED GRANULAR MATERIAL MUST BE PLACED UNDER THE GRADE PLATES.

7) REFER TO BIN-TYPE RETAINING WALLS TYPE 2 INSTALLATION INSTRUCTIONS BOOKLET FOR ADDITIONAL ASSEMBLY AND BACKFILL PROCEDURES.

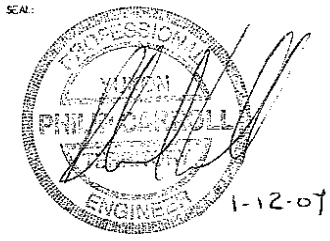
DESIGN NOTES

1) THE DESIGN PROCEDURE TO DETERMINE THE STABILITY OF THE BINS FOLLOWS THE COULOMB WEDGE ANALYSIS. LATERAL EARTH PRESSURES ON THE WALL ARE BASED ON THE EQUILIBRIUM OF A FAILURE WEDGE OF SOIL BEHIND THE BIN. THE PRINCIPAL ASSUMPTIONS OF THIS METHOD ARE:
   - i. THE BACKFILL TO BE A GOOD QUALITY, FREE DRAINING, EVENLY GRADED GRANULAR MATERIAL POSSESSING A MINIMUM INTERNAL FRICTION ANGLE = 33°. BACKFILL DENSITY = 19 kN/m³ AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
   - ii. FAILURE PLANE IS ALONG A STRAIGHT LINE ORIGINATING FROM THE HEEL OF THE BIN.
   - iii. FRICTION FORCES ARE ASSUMED TO BE DISTRIBUTED UNIFORMLY ALONG THE FAILURE PLANE AND SIMILARLY ALONG THE REAR WALL OF THE BIN.
   - iv. THE FAILURE WEDGE IS ASSUMED TO BE A RIGID BODY.
   - v. FAILURE IS A 2-DIMENSIONAL PROBLEM BUT A UNIT LENGTH OF WALL AND BACKFILL IS CONSIDERED FOR ANALYSIS.
   - vi. THE PROVIDED DESIGN IS FOR THE BIN-WALL ONLY AND ASSUMES THAT THE GLOBAL SLOPE STABILITY IS CERTIFIED BY A GEOTECHNICAL CONSULTANT.
2) MINIMUM FACTORS OF SAFETY AGAINST OVERTURNING AND SLIDING ARE 2.0 AND 1.5 RESPECTIVELY.
3) DESIGN PARAMETERS
   - LIVE LOAD CL-625 (OR EQUIVALENT)
   - DEAD LOAD REACTION IS 334 kN
   - BRIDGE SPAN IS 21.336 m
   - FILL HEIGHT IS 1.4m
4) GRADE PLATES FOR VERTICAL CONNECTORS MUST BE FOUNDED ON A YIELDING FOUNDATION. ROCK OR UNYIELDING SOIL MUST BE REMOVED FOR AN AREA OF 600 mm x 600 mm x 200 mm DEPTH AND REPLACED WITH A 200 mm THICK LAYER OF UNCOMPACTED FILL.
5) BINS ARE VERTICAL.
6) MAXIMUM ANTICIPATED BEARING PRESSURE REQUIRED TO SUPPORT BIN-WALL = 210 kPa
7) FOR WALLS CONSTRUCTED ALONG WATERWAYS, EMBEDMENT DEPTHS (FOUNDATION DEPTH) MUST BE ESTABLISHED BELOW POTENTIAL SCOUR DEPTHS TO PREVENT ANY LOSS OF MATERIALS RETAINED BY OR SUPPORTING THE BIN. SELECTION OF AN APPROPRIATE EMBEDMENT DEPTH AND DESIGN OF SCOUR PROTECTION FOR THIS APPLICATION IS BY OTHERS.
8) THE OWNER OR THEIR GEOTECHNICAL CONSULTANT MUST QUALIFY SITE CONDITIONS TO MEET OR EXCEED THE ABOVE REQUIREMENTS.



TYPICAL BIN-WALL ABUTMENT SECTION
4167 HIGH

ENGINEER'S SEAL:



THE ENGINEER'S SEAL CERTIFIES THE ARMTEC BIN-TYPE RETAINING WALL TO BE ADEQUATE AS A GRAVITY RETAINING WALL. THIS SEAL DOES NOT CERTIFY THE BINS AGAINST FAILURE DUE TO EXCESS DIFFERENTIAL SETTLEMENT, FAULTY INSTALLATION OR GLOBAL INSTABILITY.

PLEASE NOTE THIS DRAWING IS PRELIMINARY IN NATURE AND ADDITIONAL STRUCTURAL DETAILS WILL BE ADDED UPON PREPARATION OF APPROVAL DRAWINGS AFTER RECEIPT OF ORDER.

PRELIMINARY
NOT FOR FINAL DESIGN OR CONSTRUCTION PURPOSES

NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED.

NO.	DATE	DESCRIPTION OF REVISION	BY	CK'D
0	07/01/11	ISSUED FOR COMMENTS	DL	KA

BUNKER CREEK

BIN-TYPE RETAINING WALL
BACKFILL INSTRUCTIONS &
DESIGN NOTES FOR
DESIGN 'C'
BIN-WALL ABUTMENTS

DATE 07/01/09
DRAWN D. LOWE
CHECKED K. AIRD
REVIEWED
SCALE N.T.S.
INQUIRY NO. BW-02-07

TAG NO.

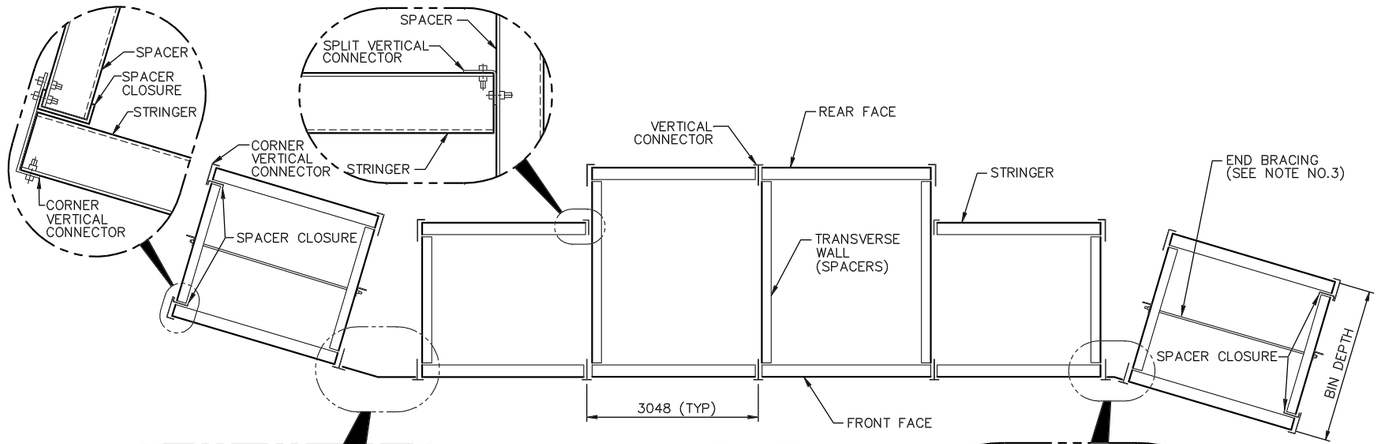
armtec

QUANTITY

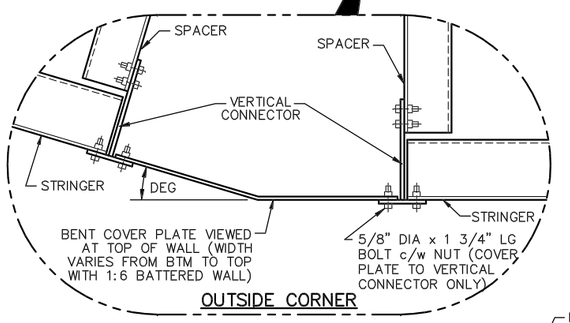
WT

DRAWING NO. BW 02-07 002 REV 0

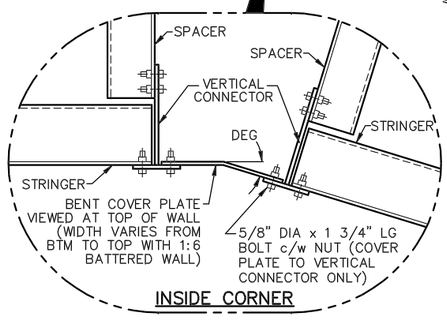
SHEET 2 OF 2



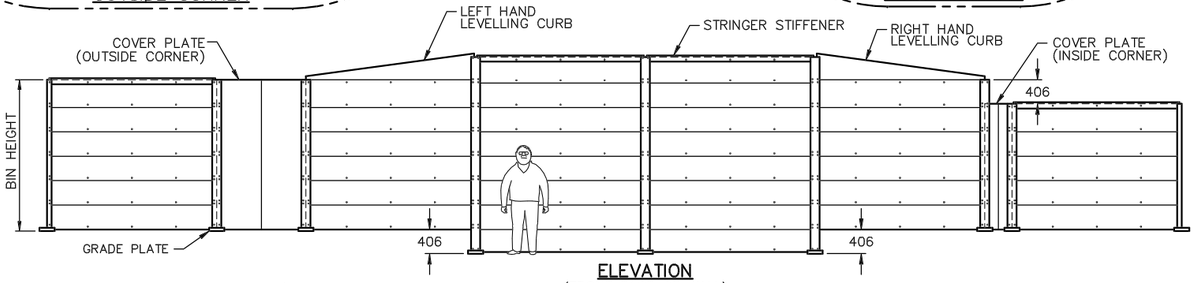
PLAN VIEW



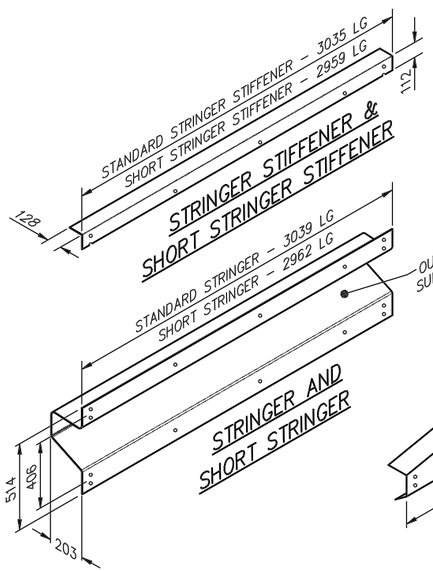
OUTSIDE CORNER

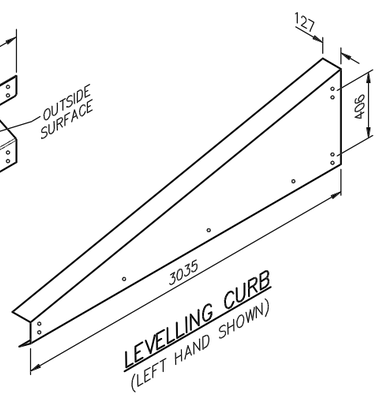


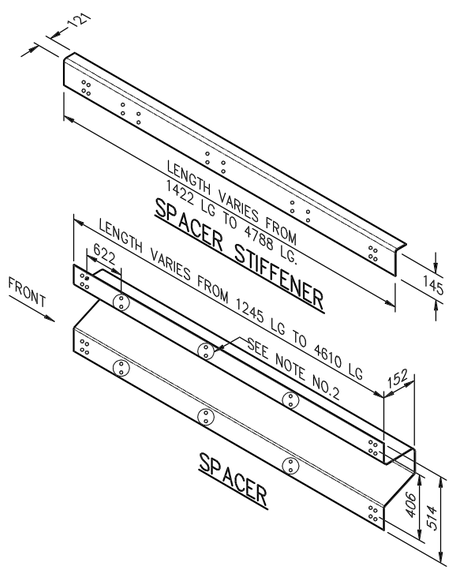
INSIDE CORNER

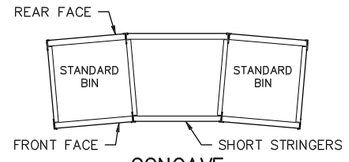


ELEVATION
(FRONT FACE OF WALL)

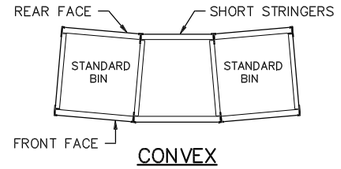






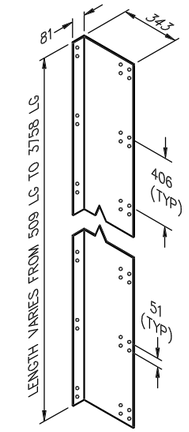


CONCAVE

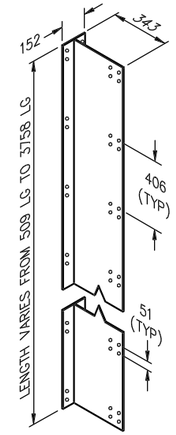


CONVEX

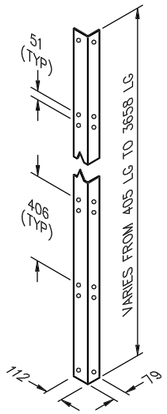
BIN–WALL ON CURVES



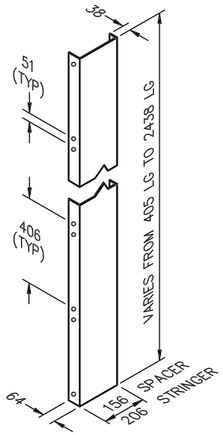
CORNER VERTICAL CONNECTOR



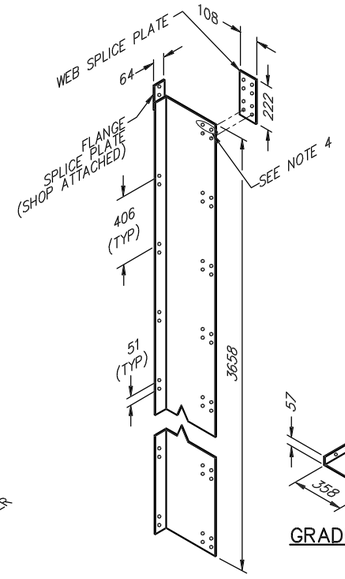
VERTICAL CONNECTOR



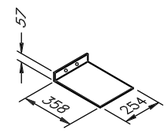
SPLIT VERTICAL CONNECTOR



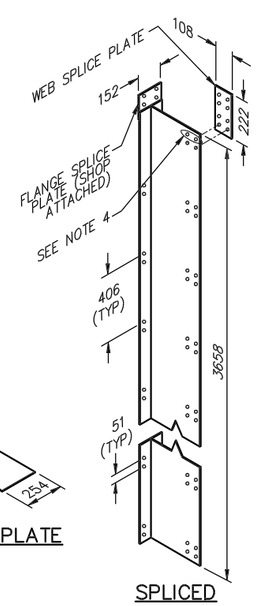
SPACER AND STRINGER CLOSURE



SPLICED CORNER VERTICAL CONNECTOR



GRADE PLATE



SPLICED VERTICAL CONNECTOR

NOTES

1. SPECIAL VERTICAL CONNECTORS ARE USED ON WALLS HIGHER THAN 3758. FOR THESE WALLS THE VERTICAL CONNECTORS WILL CONTAIN TWO OR MORE PIECES. THE 3658 LG SPECIAL VERTICAL CONNECTOR SHOULD BE USED FIRST, WITH THE ATTACHED SPLICE PLATE AT THE TOP. SPECIAL CORNER VERTICAL CONNECTORS ARE USED EITHER THE SAME OR WITH THE SPLICE PLATE AT THE BOTTOM, DEPENDING ON WHETHER IT IS ON A LEFT OR RIGHT HAND CORNER. SEE DWG BW–40002E FOR MAKE–UP.
2. ONLY ONE OF THE TWO HOLES SHOWN THUS (o o) IN THE SPACERS IS USED FOR BOLTING THE SPACERS TOGETHER EXCEPT FOR THE END WALLS WHERE BOTH HOLES ARE USED.
3. IN CERTAIN CONDITIONS THE END BIN(S) WILL REQUIRE BRACING SEE CHART ON DWG NO. BW–40002E
4. BOLT WEB SPLICE WITH 6 – 5/8" DIA. x 1 1/4" LG BIN–WALL BOLT AND NUT. (TOP TWO HOLES ARE NOT FILLED ON SPLICED CORNER VERTICAL AND VERTICAL CONNECTOR WEBS)
5. ALL BOLTS & NUTS ARE 5/8" DIA x 1 1/4" LG UNLESS NOTED
6. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED.

NO.	DATE	DESCRIPTION OF REVISION	BY	CK'D
4	01/11/08	UPDATED DRAWING	TCB	
3	AUG 29/96	ADDED NOTE 4	D.L.	K.A.
2	DEC 7/87	NEW DWG NO, REV CO NAME & ADDED LEVELLING CURB DTL	K.A.	

BIN TYPE RETAINING WALL TYPE 2 STANDARD DETAILS AND COMPONENTS

DATE	
DRAWN	
CHECKED	
REVIEWED	
APPROVED	
SCALE	N.T.S.
DRAWING NO.	BW–40001E
REV.	4

CORNER VERTICAL & VERTICAL CONNECTORS GREATER THAN 3758 LG ARE BUILT UP AS FOLLOWS (UNLESS NOTED)

4167 LG –1x3658
1x509
1 WEB SPLICE PLATE

4572 LG –1x3658
1x914
1 WEB SPLICE PLATE

4977 LG –1x3658
1x1320
1 WEB SPLICE PLATE

5386 LG –1x3658
1x1728
1 WEB SPLICE PLATE

5791 LG –1x3658
1x2134
1 WEB SPLICE PLATE

6197 LG –1x3658
1x2539
1 WEB SPLICE PLATE

6605 LG –1x3658
1x2947
1 WEB SPLICE PLATE

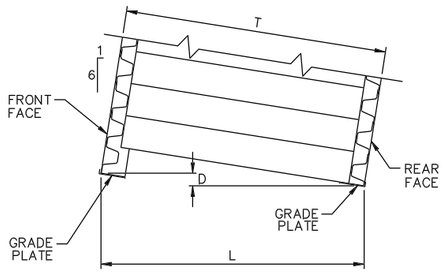
7010 LG –1x3658
1x3353
1 WEB SPLICE PLATE

7416 LG –1x3658
1x3758
1 WEB SPLICE PLATE

7824 LG –2x3658
1x509
2 WEB SPLICE PLATES

8320 LG –2x3658
1x914
2 WEB SPLICE PLATES

8635 LG –2x3658
1x1320
2 WEB SPLICE PLATES



GRADE PLATE PLACEMENT

WALL DESIGN	DIMENSIONS		
	T	D	L
A	1689	–124 *	1734
B	2362	–13 *	2397
C	3035	98	3064
D	3708	210	3724
E	4382	318	4391
F	5055	429	5055

* FRONT GRADE PLATE LOWER THAN REAR PLATE

MAXIMUM HEIGHTS AND LOADS FOR UNBRACED SPACER WALLS

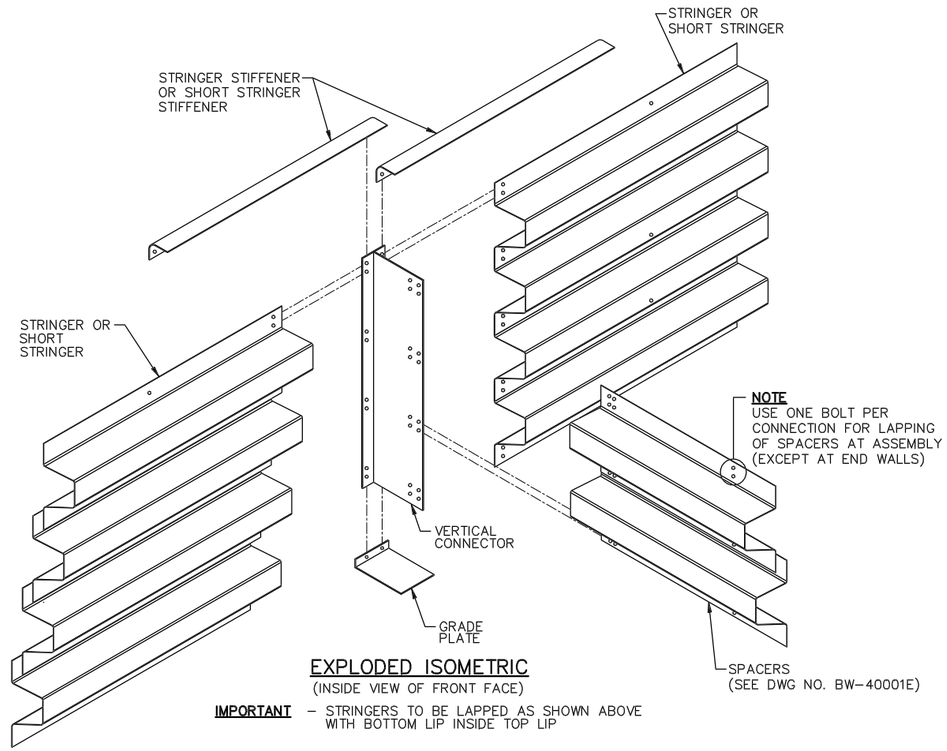
BIN DESIGN	(p max) ALLOWABLE		MAXIMUM HEIGHT WITHOUT BRACING	
	psf	k Pa	ft	mm
A	1728	83	48.0	14630
B	728	35	20.2	6160
C	498	24	13.8	4215
D	438	21	12.2	3715
E	301	14	8.4	2550
F	220	11	6.1	1860

MAXIMUM ALLOWABLE PRESSURE ON EXPOSED SPACER WALLS (p max) BASED ON LENGTH OF SPACER AND SECTION MODULUS.

MAXIMUM HEIGHT WITHOUT BRACING BASED ON SOIL DENSITY = 19 kN/m³ (120pcf) AND Φ=33° AND NO LIVE LOAD SURCHARGES.

STRINGER LOCATION & PART NO.

FRONT WALL STRINGER LOCATION	REAR WALL STRINGER LOCATION	THK mm	PART NO. STANDARD STRINGER 3039 LG	PART NO. SHORT STRINGER 2962 LG
1 THROUGH 8	1 THROUGH 6	1.6	WSA1601	WSB1601
9 THROUGH 12	7 THROUGH 10	2.0	WSA2001	WSB2001
13 THROUGH 19	11 THROUGH 17	2.8	WSA2801	WSB2801
20 AND 21	18 AND 19	3.5	WSA3501	WSB3501

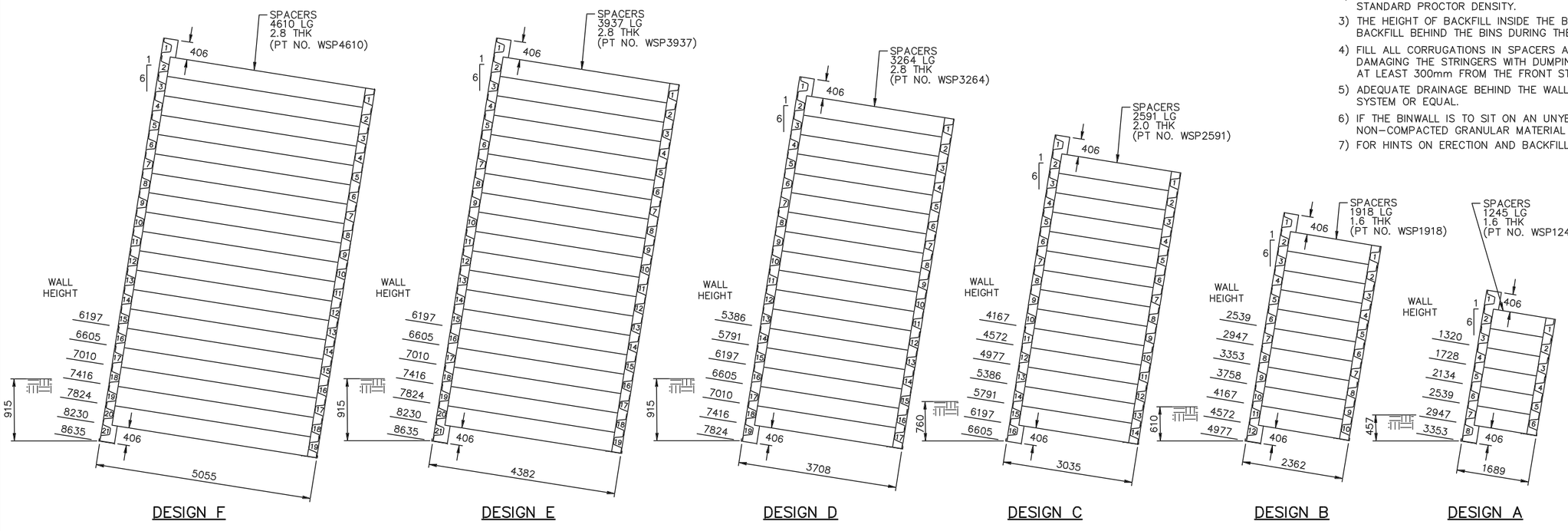


EXPLODED ISOMETRIC
(INSIDE VIEW OF FRONT FACE)

IMPORTANT – STRINGERS TO BE LAPPED AS SHOWN ABOVE WITH BOTTOM LIP INSIDE TOP LIP

NOTES

1) BACKFILL MATERIAL TO BE WELL–GRADED FREE–DRAINING GRANULAR MATERIAL, WITH LARGEST PARTICLES IN THE 75mm (MAX) RANGE AND NOT MORE THAN 10 PERCENT FINES PASSING THE NO.200 SIEVE (0.075mm).
2) BACKFILL SHOULD BE PLACED IN 200mm LAYERS (MAX) AND COMPACTED TO 95 PERCENT STANDARD PROCTOR DENSITY.
3) THE HEIGHT OF BACKFILL INSIDE THE BINS SHOULD BE AT LEAST 400mm GREATER THAN THE BACKFILL BEHIND THE BINS DURING THE BACKFILLING OPERATIONS.
4) FILL ALL CORRUGATIONS IN SPACERS AND STRINGERS, BUT CARE MUST BE EXERCISED TO AVOID DAMAGING THE STRINGERS WITH DUMPING OR COMPACTING EQUIPMENT, WHICH SHOULD BE KEPT AT LEAST 300mm FROM THE FRONT STRINGERS.
5) ADEQUATE DRAINAGE BEHIND THE WALL MUST BE ENSURED BY USING A PERFORATED CSP DRAINAGE SYSTEM OR EQUAL.
6) IF THE BINWALL IS TO SIT ON AN UNYEILDING FOUNDATION, A MINIMUM CUSHION OF 200mm THICK NON–COMPACTED GRANULAR MATERIAL MUST BE PLACED UNDER THE GRADE PLATES.
7) FOR HINTS ON ERECTION AND BACKFILL SEQUENCE SEE THE SUPPLIED ARMTEC INSTALLATION MANUAL.



DESIGN F | DESIGN E | DESIGN D | DESIGN C | DESIGN B | DESIGN A

NO.	DATE	DESCRIPTION OF REVISION	BY	CK'D
2	DEC 7/87	NEW DRAWING NO. & REVISED COMPANY NAME	K.A.	

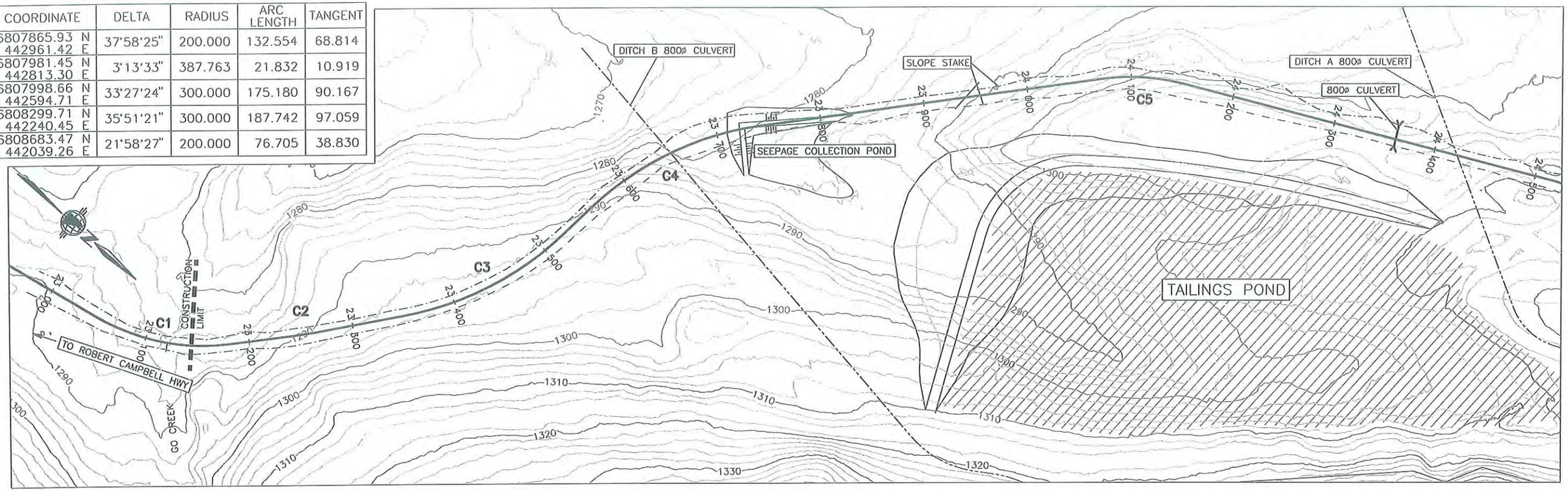
BIN–TYPE RETAINING WALL
TYPE 2
STANDARD DEPTH & HEIGHT COMBINATIONS

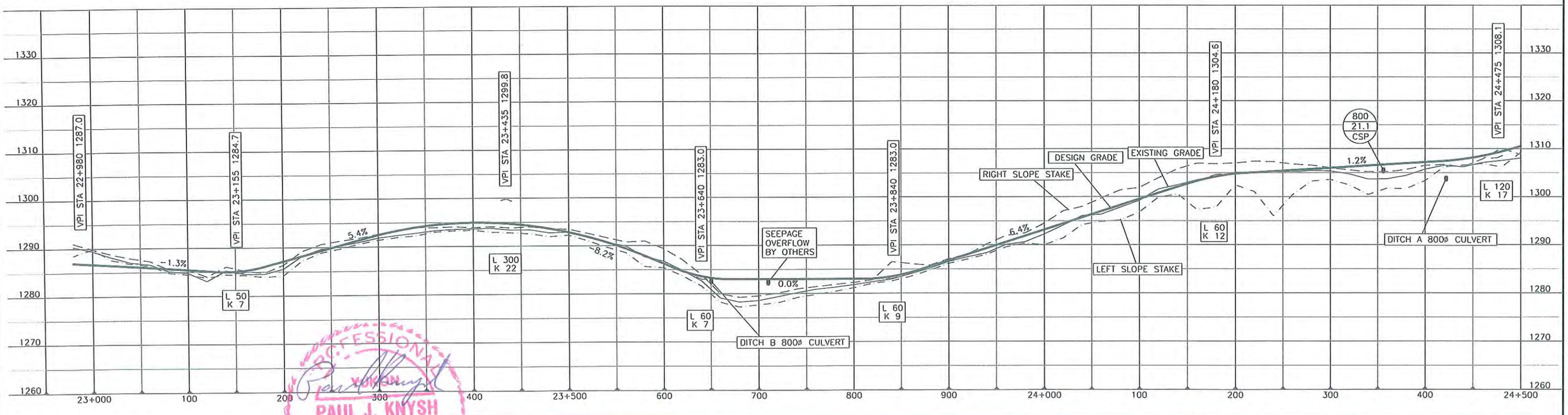
DATE
DRAWN
CHECKED
REVIEWED
APPROVED
SCALE

armtec LIMITED

DRAWING NO. BW–40002E
REV. 2

CURVE	COORDINATE	DELTA	RADIUS	ARC LENGTH	TANGENT
C1	6807865.93 N 442961.42 E	37°58'25"	200.000	132.554	68.814
C2	6807981.45 N 442813.30 E	3°13'33"	387.763	21.832	10.919
C3	6807998.66 N 442594.71 E	33°27'24"	300.000	175.180	90.167
C4	6808299.71 N 442240.45 E	35°51'21"	300.000	187.742	97.059
C5	6808683.47 N 442039.26 E	21°58'27"	200.000	76.705	38.830





NOTES:

1. REFERENCED FROM KLOHN CRIPPEN BERGER, PROJECT M09234A02, DRAWING J1-C-017
2. EXACT CULVERT PLACEMENT TO BE DETERMINED ONSITE

PROFESSIONAL ENGINEER — YUKON — PAUL J. KNYSH — TERRITORY — 2008/11/24

NO	DESCRIPTION	BY	DATE
3	ISSUED FOR REVIEW	RSC	13/11/08
2	REVISIONS	RSC	24/10/08
1	ISSUED FOR REVIEW	RSC	10/10/08

SECTION:	
SCALE: 1:4000-H 1:800-V	DATE
DESIGNED BY: RSC	10/10/08
DRAWN BY: RSC	10/10/08
CHECKED BY: JTQ	10/10/08
APPROVED BY:	

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
E06015RE.DWG	E06015	km 23.0	4

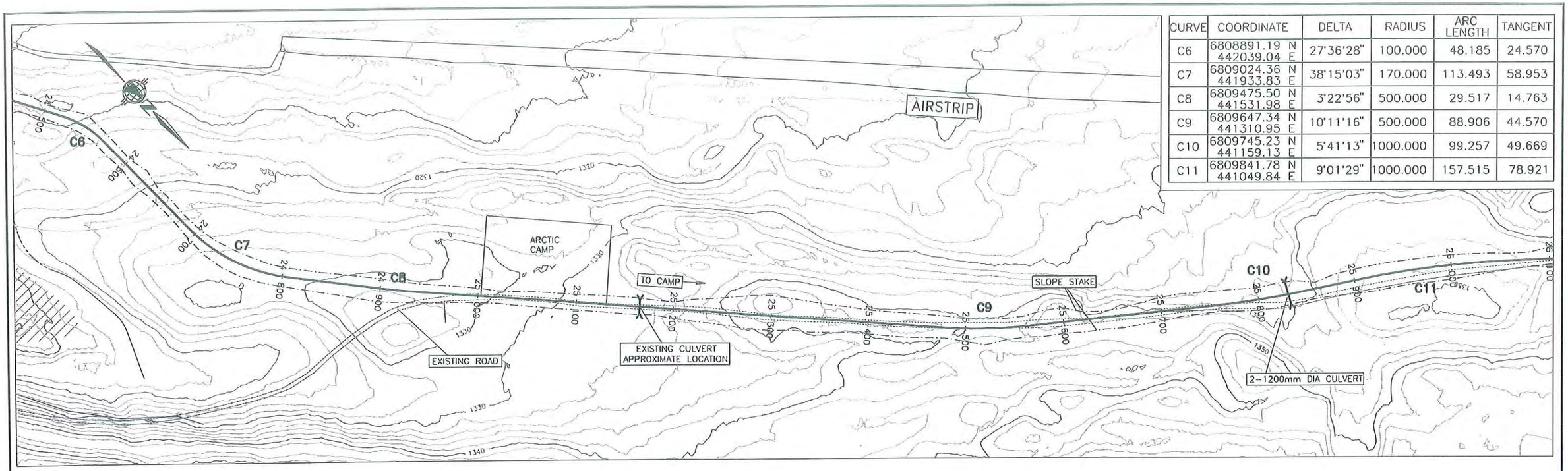
YES Yukon Zinc CORPORATION

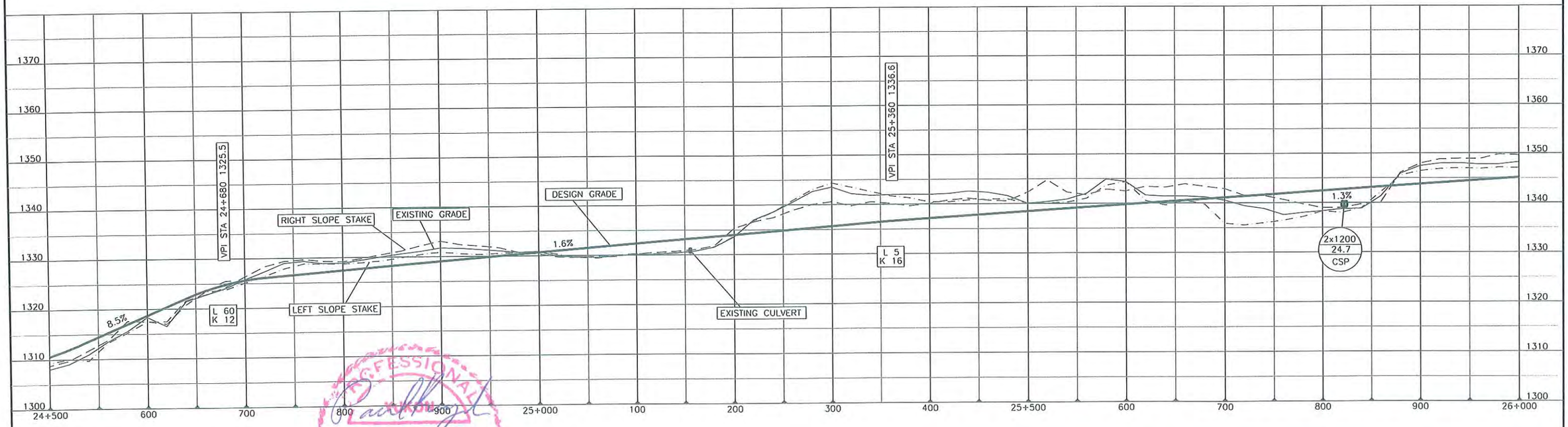
MILL SITE TO TAILINGS POND ACCESS ROAD

WOLVERINE PROJECT

PLAN/PROFILE SHEET KM 23.0 TO KM 24.5

CURVE	COORDINATE	DELTA	RADIUS	ARC LENGTH	TANGENT
C6	6808891.19 N 442039.04 E	27°36'28"	100.000	48.185	24.570
C7	6809024.36 N 441933.83 E	38°15'03"	170.000	113.493	58.953
C8	6809475.50 N 441531.98 E	3°22'56"	500.000	29.517	14.763
C9	6809647.34 N 441310.95 E	10°11'16"	500.000	88.906	44.570
C10	6809745.23 N 441159.13 E	5°41'13"	1000.000	99.257	49.669
C11	6809841.78 N 441049.84 E	9°01'29"	1000.000	157.515	78.921





NOTES:

1. REFERENCED FROM KLOHN CRIPPEN BERGER, PROJECT M09234A02, DRAWING J1-C-017
2. EXACT CULVERT PLACEMENT TO BE DETERMINED ONSITE

PROFESSIONAL ENGINEER YUKON PAUL J. KNYSH TERRITORY 2008/11/24

NO	DESCRIPTION	BY	DATE
3	ISSUED FOR REVIEW	RSC	13/11/08
2	REVISIONS	RSC	24/10/08
1	ISSUED FOR REVIEW	RSC	10/10/08

SECTION:	
SCALE: 1:4000-H 1:800-V	DATE
DESIGNED BY: RSC	10/10/08
DRAWN BY: RSC	10/10/08
CHECKED BY: JTQ	10/10/08
APPROVED BY:	

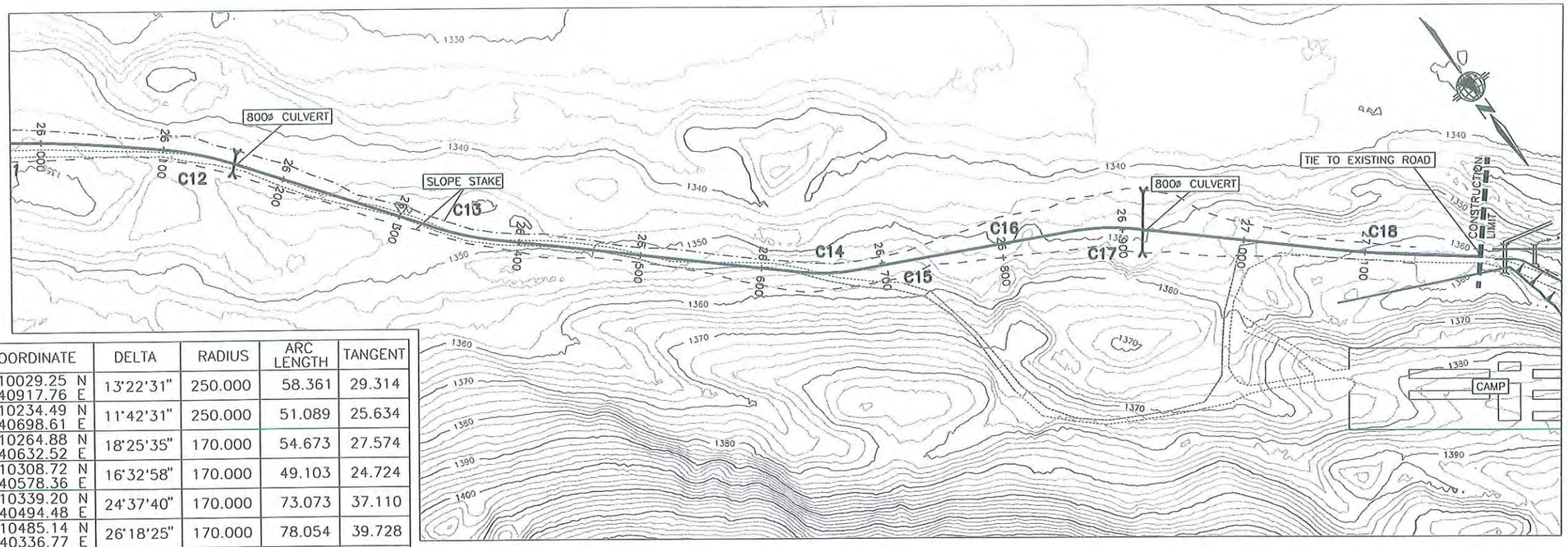
FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
E06015RE.DWG	E06015	km 24.5	4

YES Yukon Zinc CORPORATION

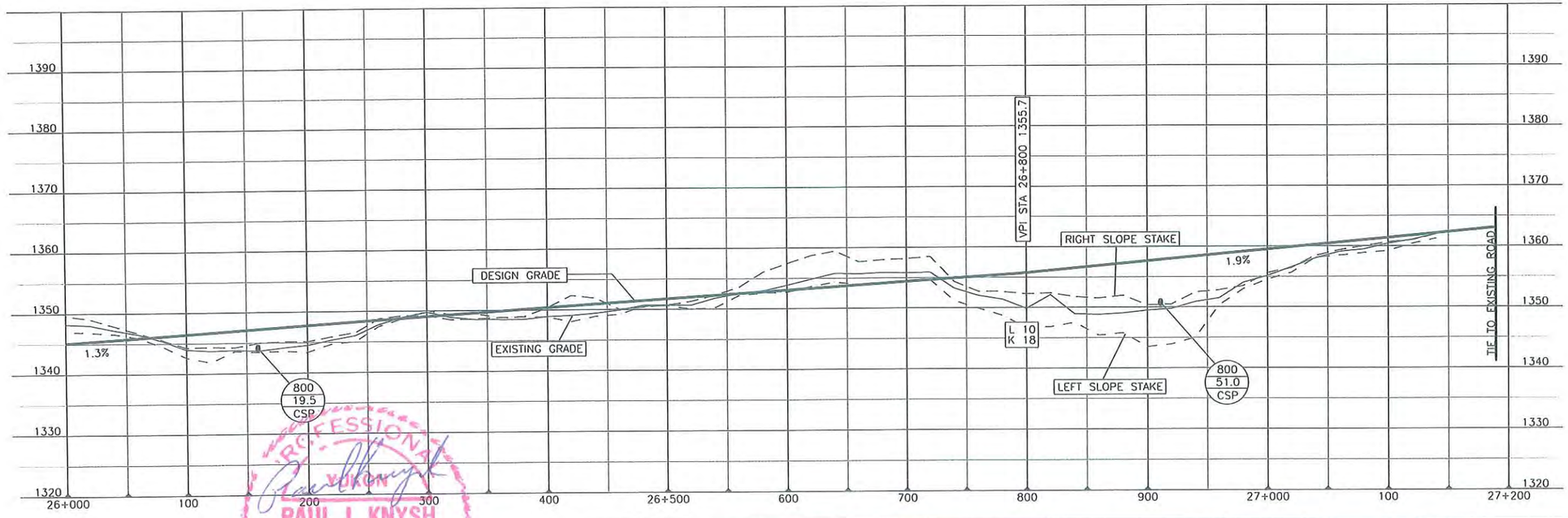
MILL SITE TO TAILINGS POND ACCESS ROAD

WOLVERINE PROJECT

PLAN/PROFILE SHEET
KM 24.5 TO KM 26.0



CURVE	COORDINATE	DELTA	RADIUS	ARC LENGTH	TANGENT
C12	6810029.25 N 440917.76 E	13°22'31"	250.000	58.361	29.314
C13	6810234.49 N 440698.61 E	11°42'31"	250.000	51.089	25.634
C14	6810264.88 N 440632.52 E	18°25'35"	170.000	54.673	27.574
C15	6810308.72 N 440578.36 E	16°32'58"	170.000	49.103	24.724
C16	6810339.20 N 440494.48 E	24°37'40"	170.000	73.073	37.110
C17	6810485.14 N 440336.77 E	26°18'25"	170.000	78.054	39.728
C18	6810545.68 N 440262.75 E	4°05'03"	1000.000	71.284	35.657



NOTES:

1. REFERENCED FROM KLOHN CRIPPEN BERGER, PROJECT M09234A02, DRAWING J1-C-017
2. EXACT CULVERT PLACEMENT TO BE DETERMINED ONSITE

PROFESSIONAL ENGINEER YUKON TERRITORY PAUL J. KNYSH 2008 11 24

NO	DESCRIPTION	BY	DATE

NO	DESCRIPTION	BY	DATE
3	ISSUED FOR REVIEW	RSC	13/11/08
2	REVISIONS	RSC	24/10/08
1	ISSUED FOR REVIEW	RSC	10/10/08

SECTION:	
SCALE: 1:4000-H 1:800-V	DATE
DESIGNED BY: RSC	10/10/08
DRAWN BY: RSC	10/10/08
CHECKED BY: JTO	10/10/08
APPROVED BY:	

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
E06015RE.DWG	E06015	km 26.0	4

YES Yukon Zinc CORPORATION

MILL SITE TO TAILINGS POND ACCESS ROAD

WOLVERINE PROJECT

PLAN/PROFILE SHEET
KM 26.0 TO KM 27.2

PLAN PROFILE AND DESIGN CROSS SECTIONS WOLVERINE MINE ACCESS ROAD YUKON ZINC CORPORATION NOVEMBER, 2008

YUKON ENGINEERING SERVICES

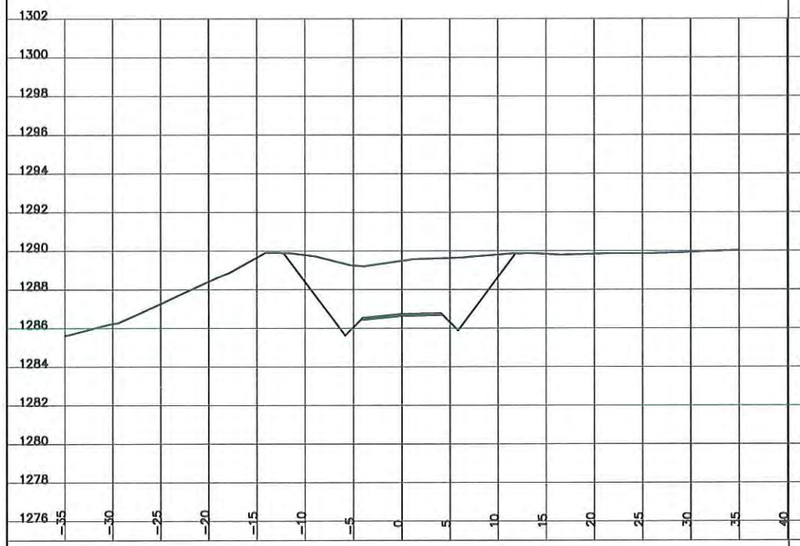
E06015RE

Cover Nov 26, 2008

DESIGN CROSS SECTIONS
WOLVERINE MINE ACCESS ROAD
YUKON ZINC CORP.
NOVEMBER, 2008

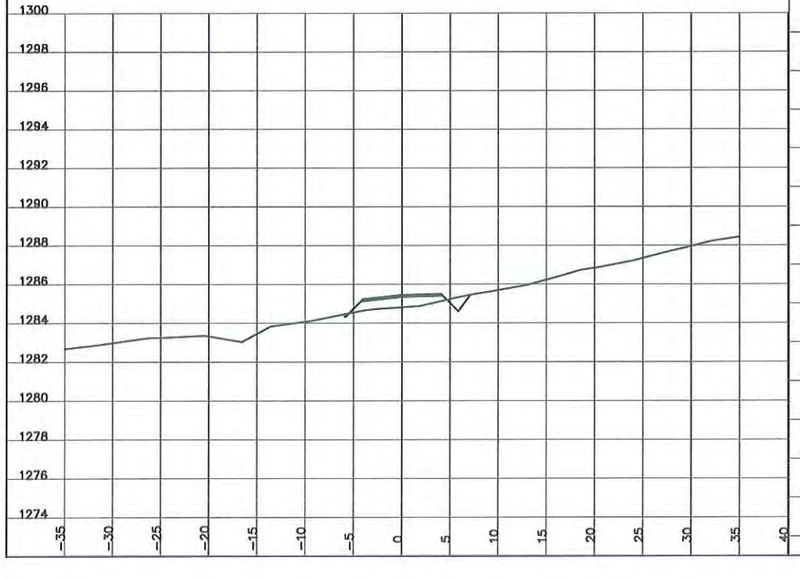
STATION 23+000.00
H= 1:600 V= 1:300

CUT= 58.39



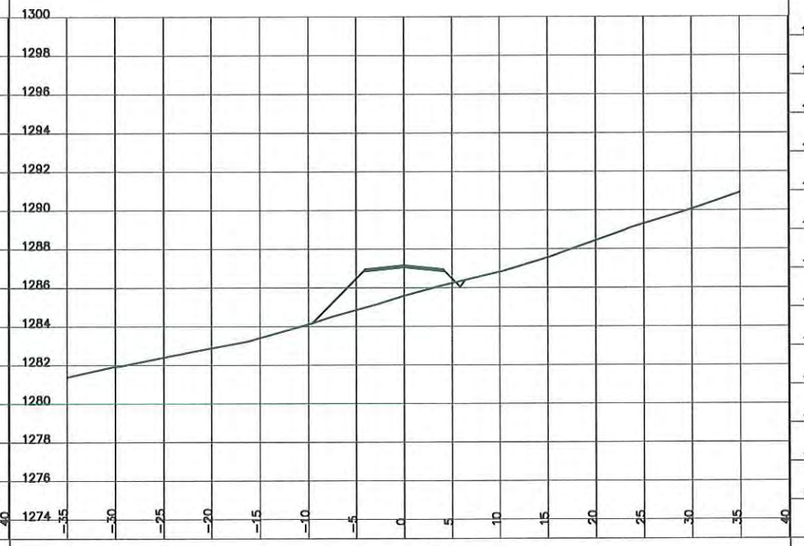
STATION 23+100.00
H= 1:600 V= 1:300

CUT= 0.92 FILL= 4.33



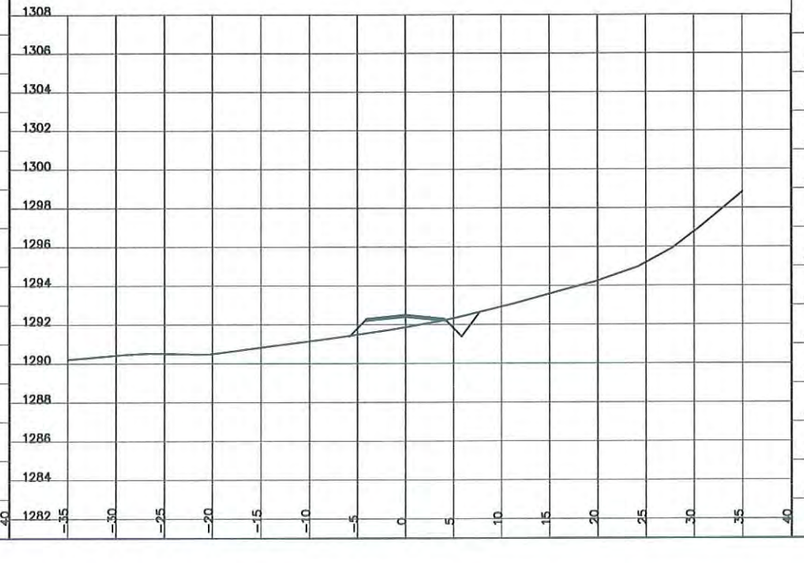
STATION 23+200.00
H= 1:600 V= 1:300

CUT= 0.15 FILL= 17.20



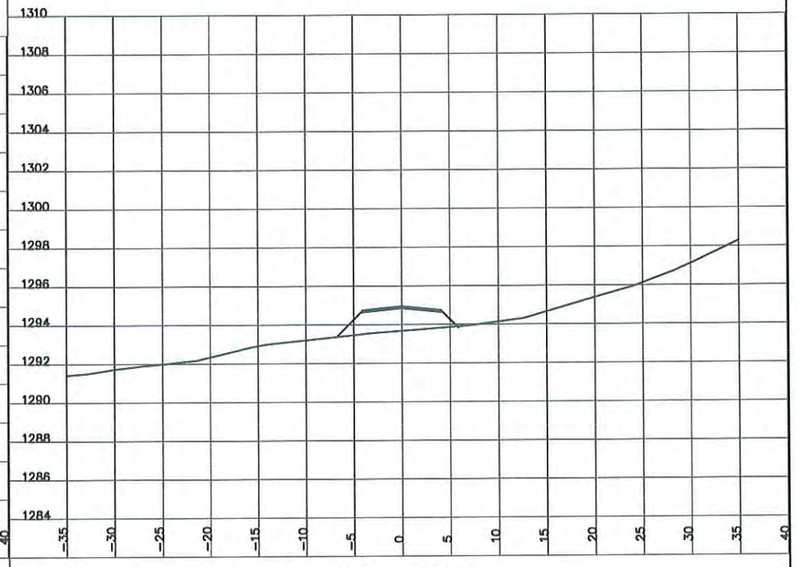
STATION 23+300.00
H= 1:600 V= 1:300

CUT= 1.85 FILL= 4.07



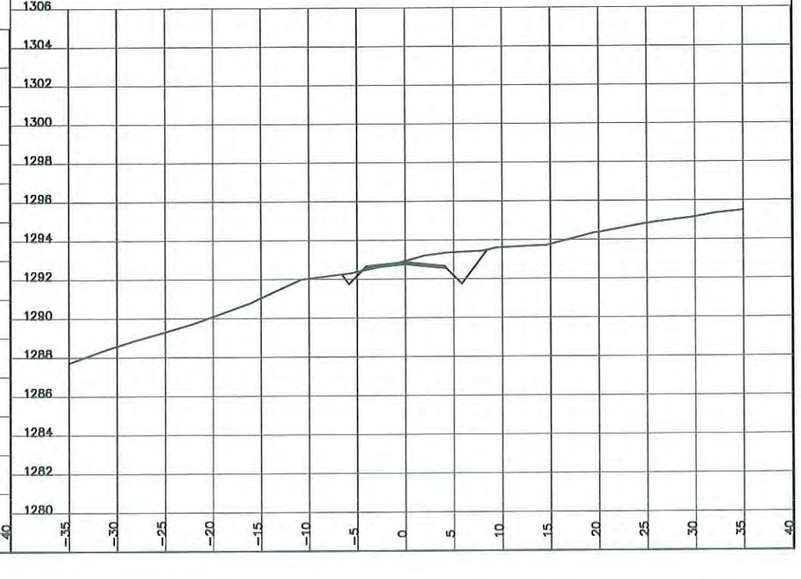
STATION 23+400.00
H= 1:600 V= 1:300

FILL= 11.11



STATION 23+500.00
H= 1:600 V= 1:300

CUT= 7.00 FILL= 0.10

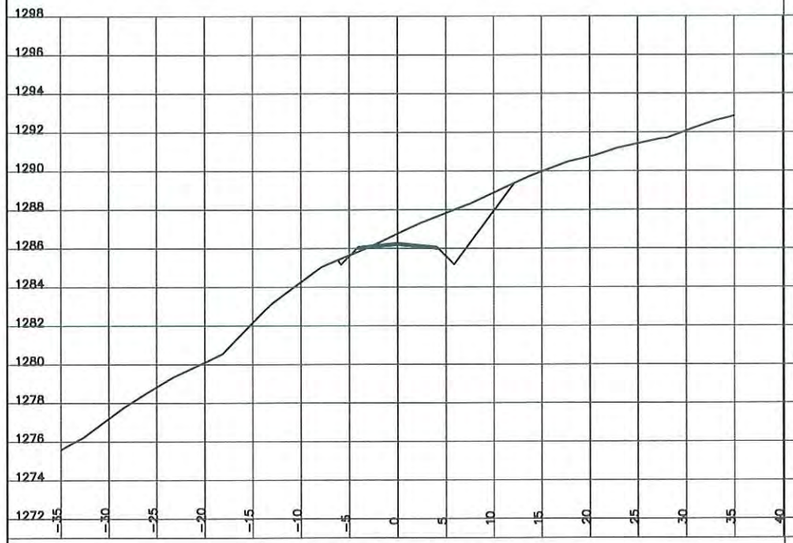


Layout1 Nov 26, 2008

DESIGN CROSS SECTIOA
WOLVERINE MINE ACCESS ROAD
YUKON ZINC CORP.
NOVEMBER, 2008

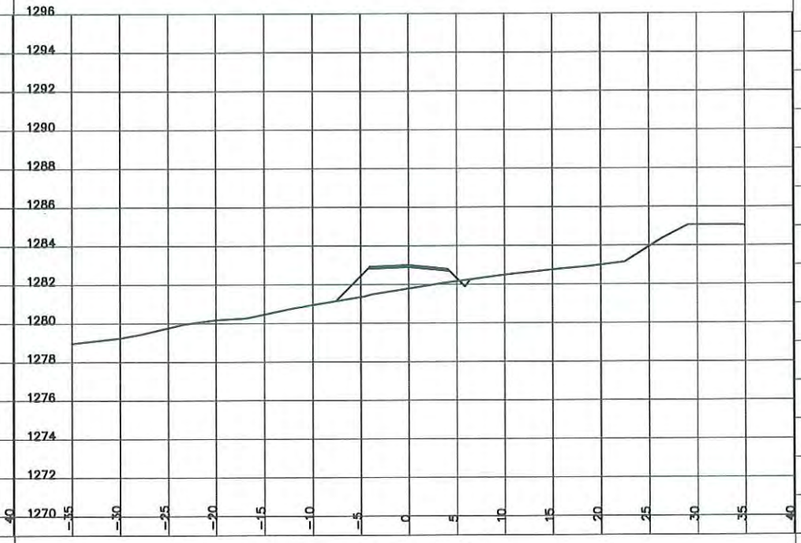
STATION 23+600.00
H= 1:600 V= 1:300

CUT= 18.37 FILL= 0.15



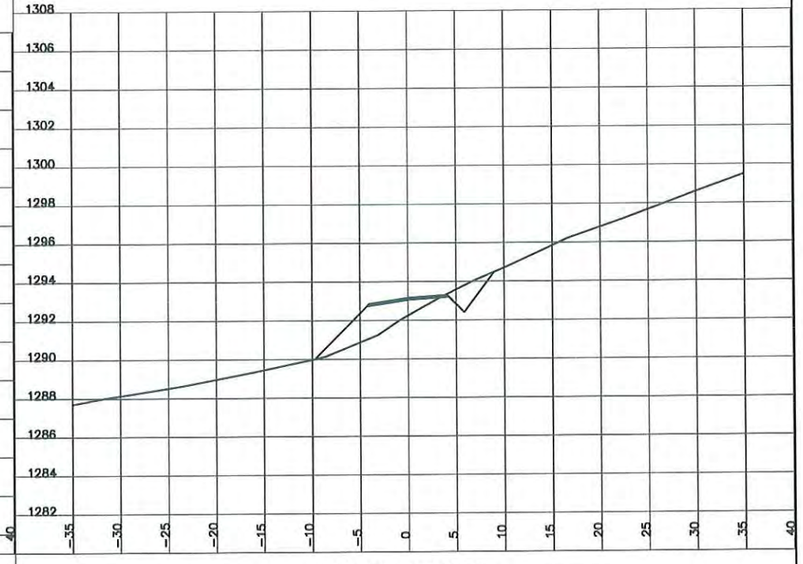
STATION 23+800.00
H= 1:600 V= 1:300

CUT= 0.19 FILL= 11.46



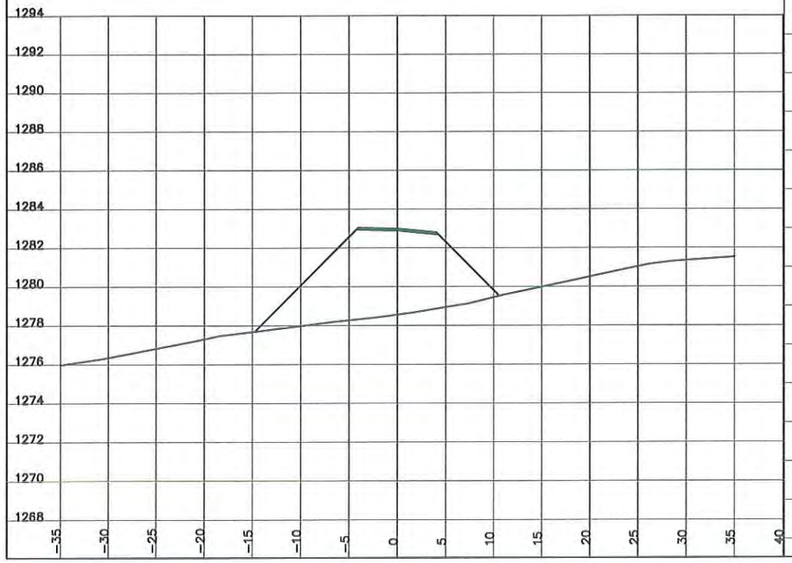
STATION 24+000.00
H= 1:600 V= 1:300

CUT= 3.54 FILL= 11.84



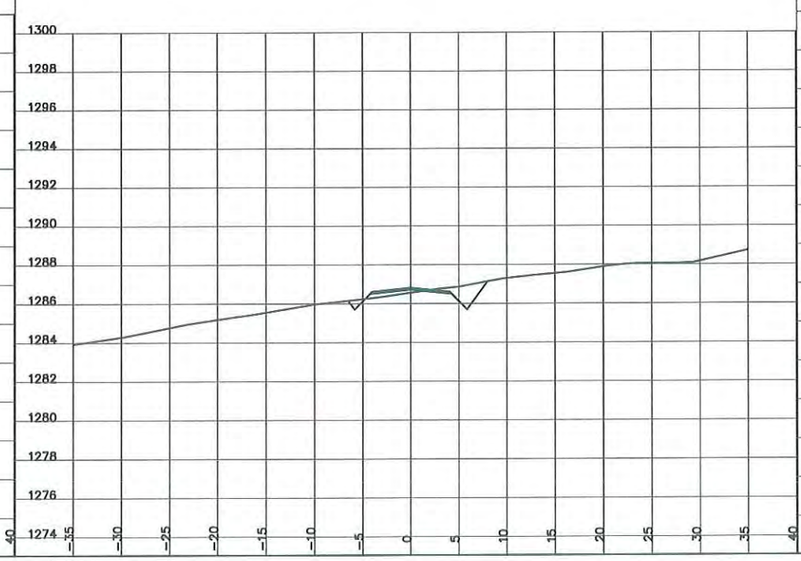
STATION 23+700.00
H= 1:600 V= 1:300

FILL= 72.87



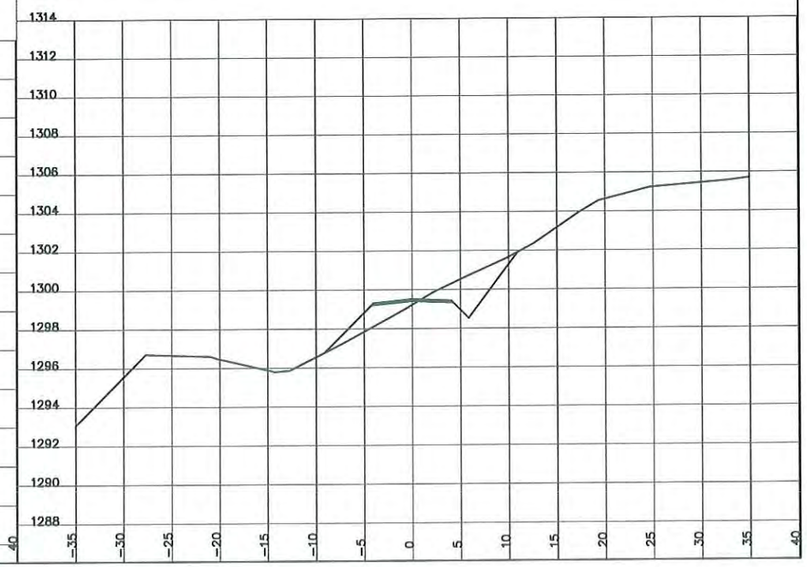
STATION 23+900.00
H= 1:600 V= 1:300

CUT= 3.53 FILL= 0.99



STATION 24+100.00
H= 1:600 V= 1:300

CUT= 10.02 FILL= 5.79

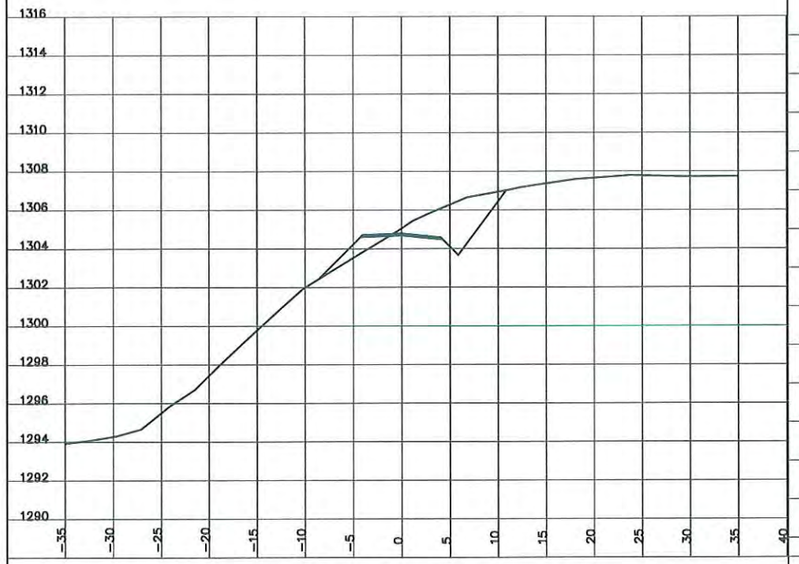


Layout1 (2) Nov 26, 2008

DESIGN CROSS SECTIONS
WOLVERINE MINE ACCESS ROAD
YUKON ZINC CORP.
NOVEMBER, 2008

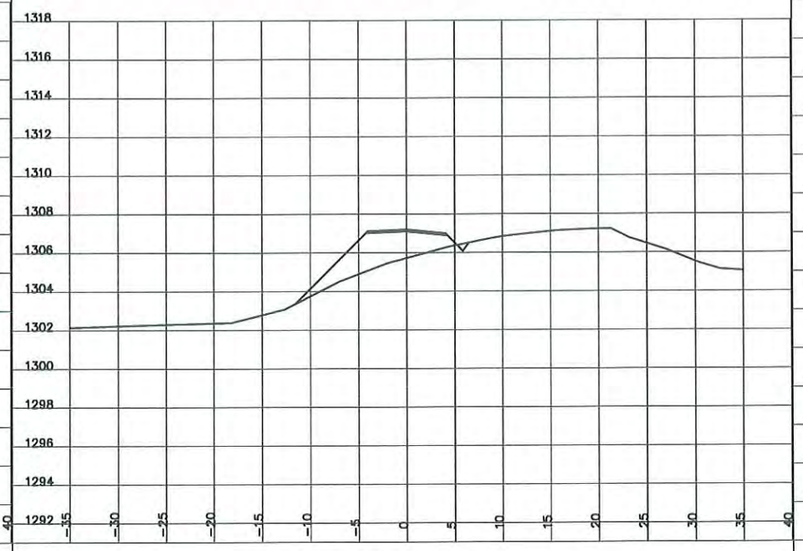
STATION 24+200.00
H= 1:600 V= 1:300

CUT= 15.48 FILL= 3.12



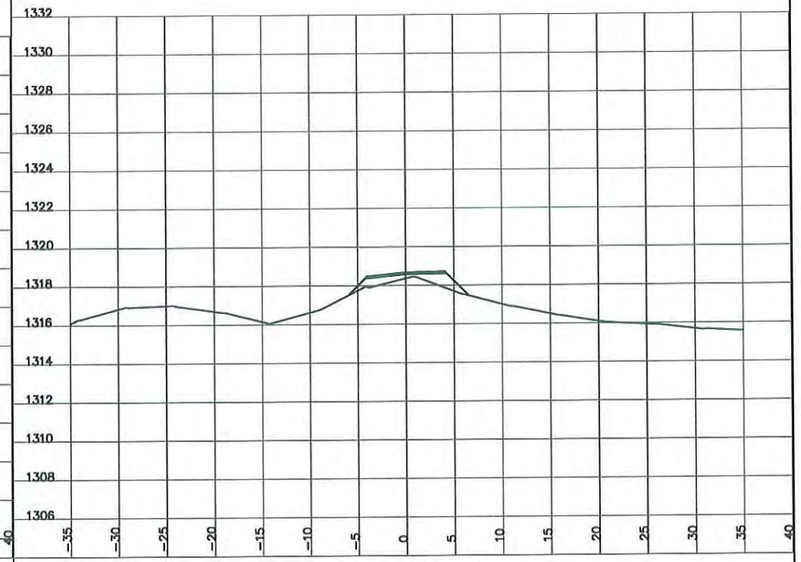
STATION 24+400.00
H= 1:600 V= 1:300

CUT= 0.23 FILL= 18.39



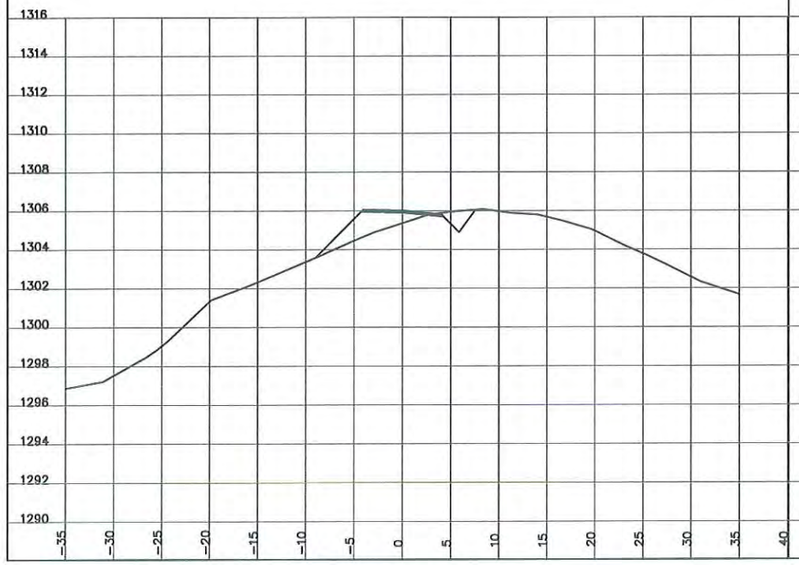
STATION 24+600.00
H= 1:600 V= 1:300

FILL= 4.55



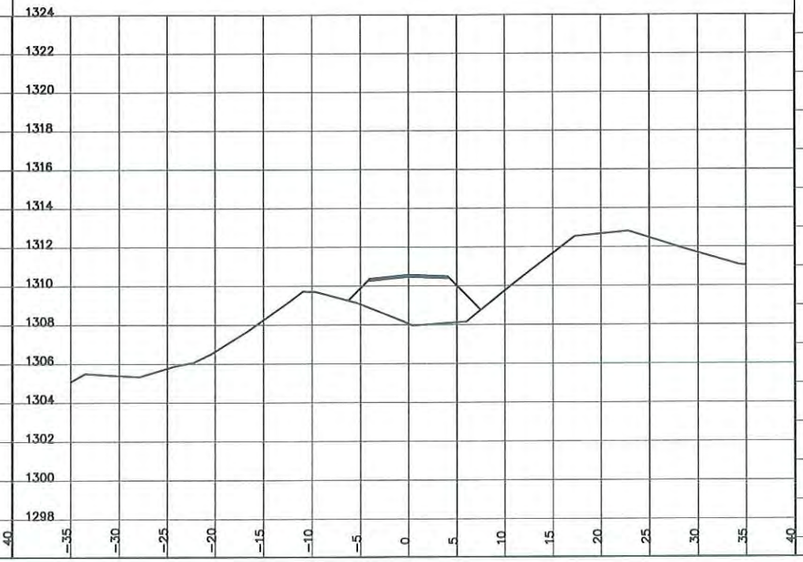
STATION 24+300.00
H= 1:600 V= 1:300

CUT= 2.15 FILL= 7.81



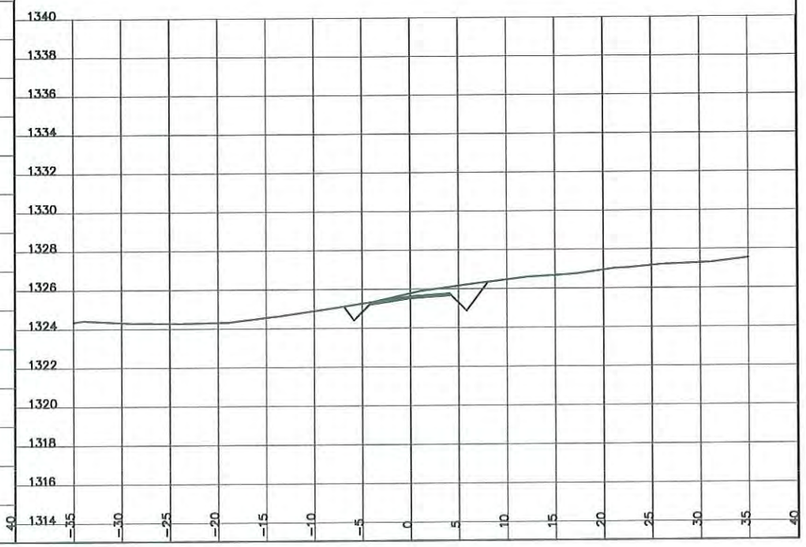
STATION 24+500.00
H= 1:600 V= 1:300

FILL= 23.78



STATION 24+700.00
H= 1:600 V= 1:300

CUT= 6.36

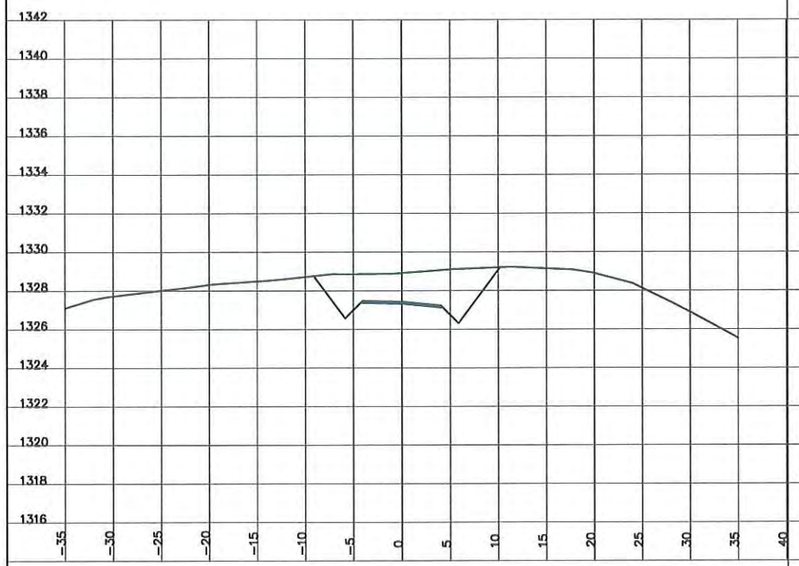


Layout1 (3) Nov 26, 2008

DESIGN CROSS SECTIONS
WOLVERINE MINE ACCESS ROAD
YUKON ZINC CORP.
NOVEMBER, 2008

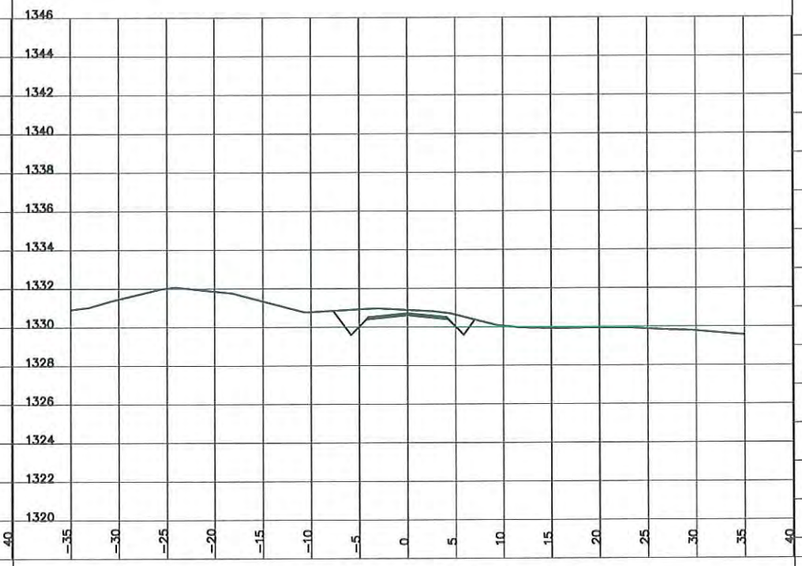
STATION 24+800.00
H= 1:600 V= 1:300

CUT= 30.73



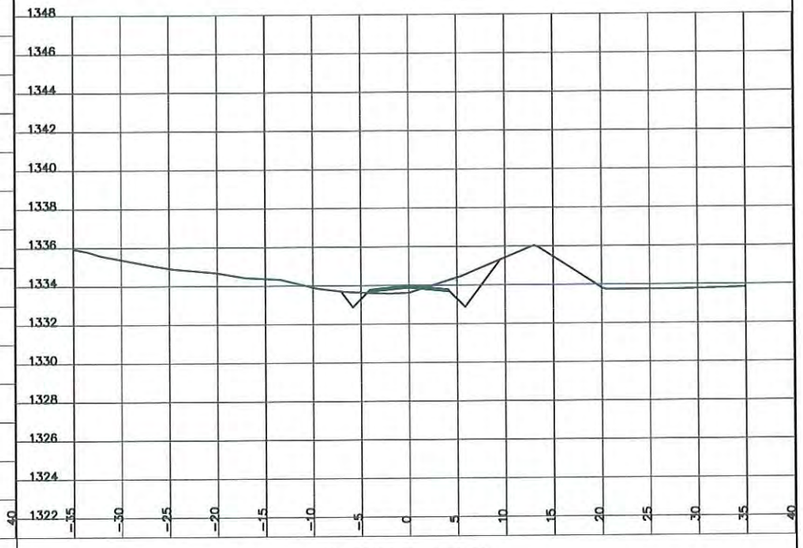
STATION 25+000.00
H= 1:600 V= 1:300

CUT= 7.41



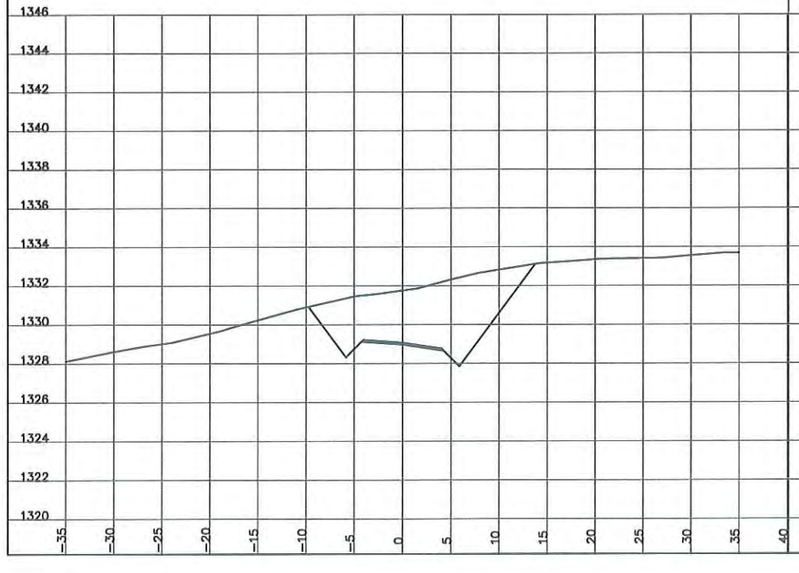
STATION 25+200.00
H= 1:600 V= 1:300

CUT= 6.85 FILL= 0.94



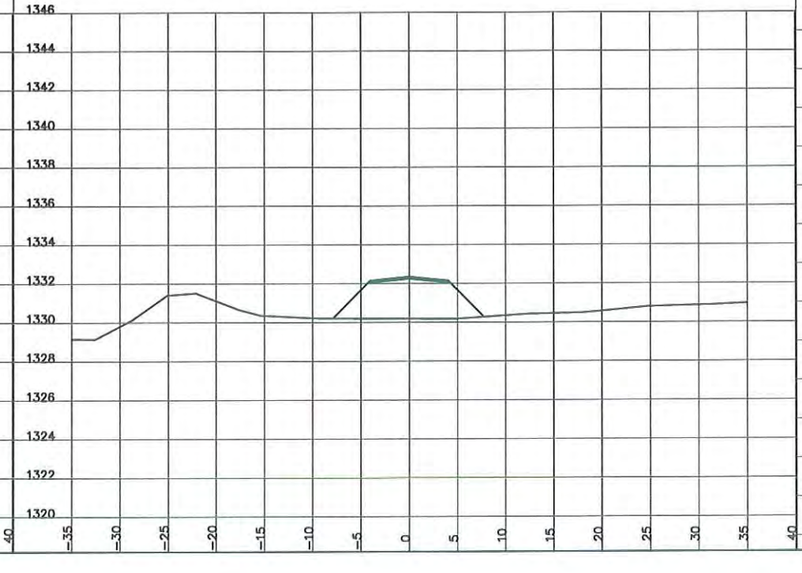
STATION 24+900.00
H= 1:600 V= 1:300

CUT= 59.39



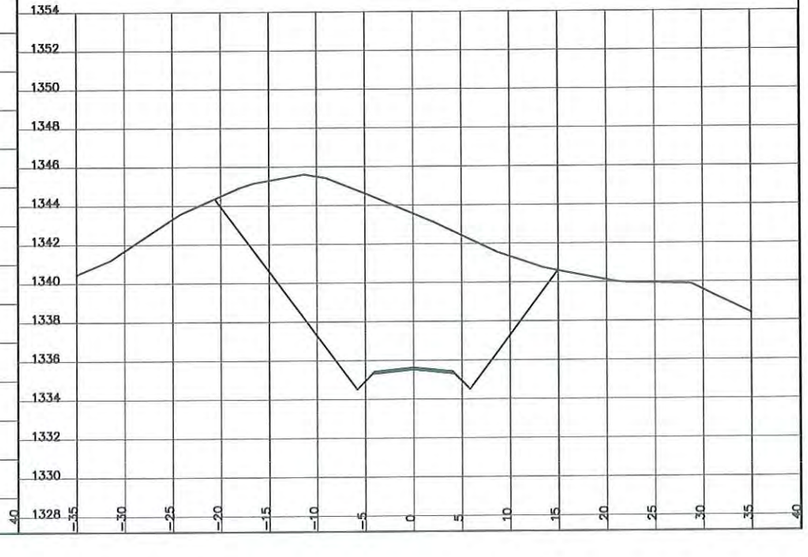
STATION 25+100.00
H= 1:600 V= 1:300

FILL= 23.26



STATION 25+300.00
H= 1:600 V= 1:300

CUT= 215.70

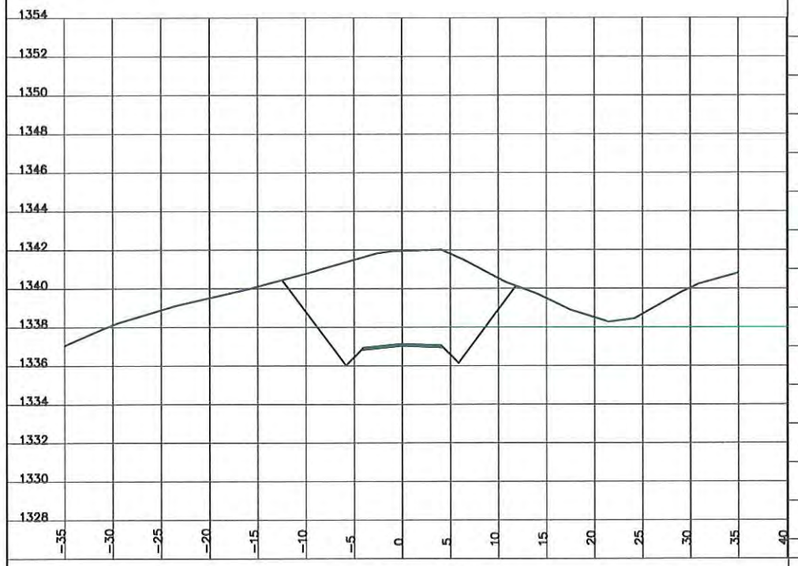


Layout1 (4) Nov 26, 2008

DESIGN CROSS SECTIONS
WOLVERINE MINE ACCESS ROAD
YUKON ZINC CORP.
NOVEMBER, 2008

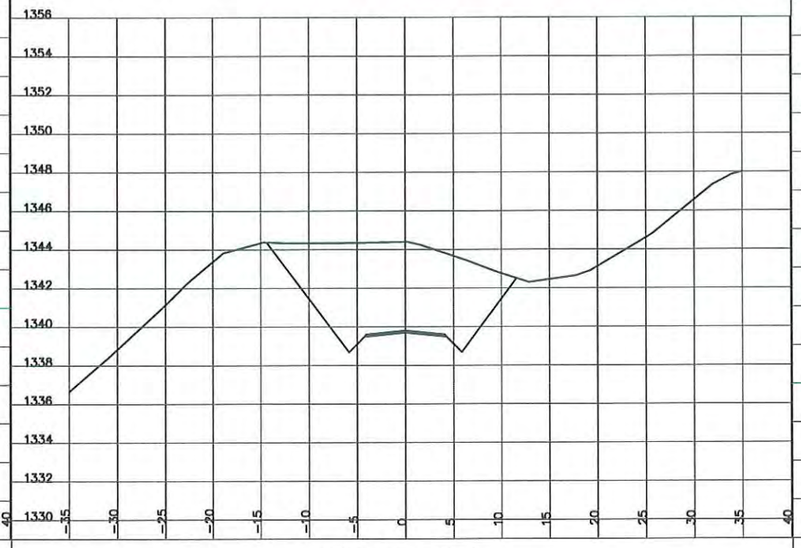
STATION 25+400.00
H= 1:600 V= 1:300

CUT= 92.34



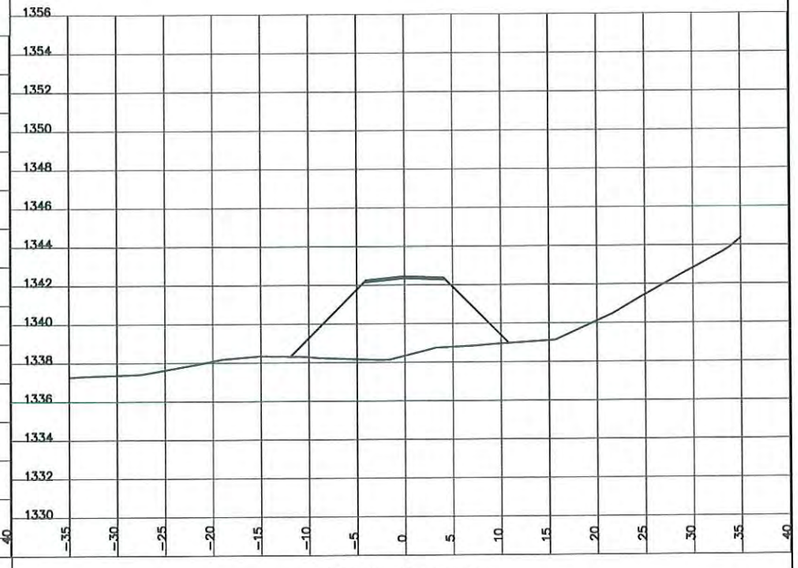
STATION 25+600.00
H= 1:600 V= 1:300

CUT= 93.14



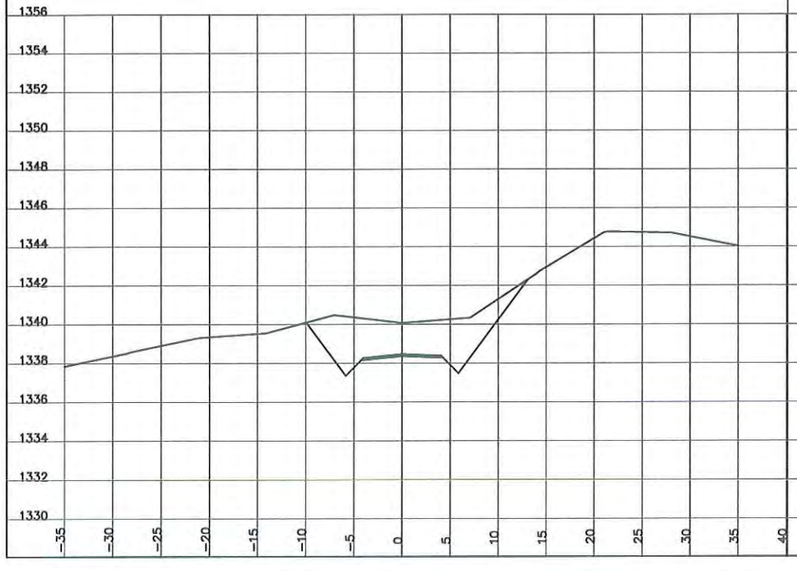
STATION 25+800.00
H= 1:600 V= 1:300

FILL= 59.92



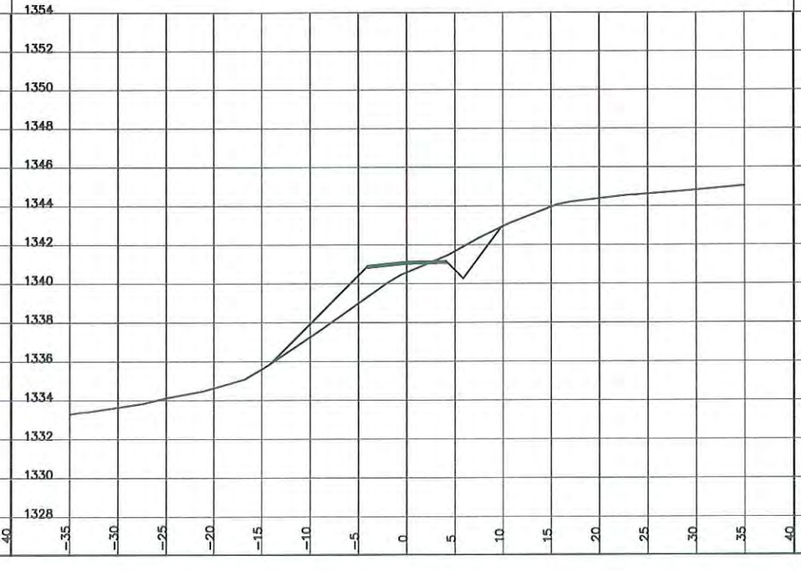
STATION 25+500.00
H= 1:600 V= 1:300

CUT= 39.69



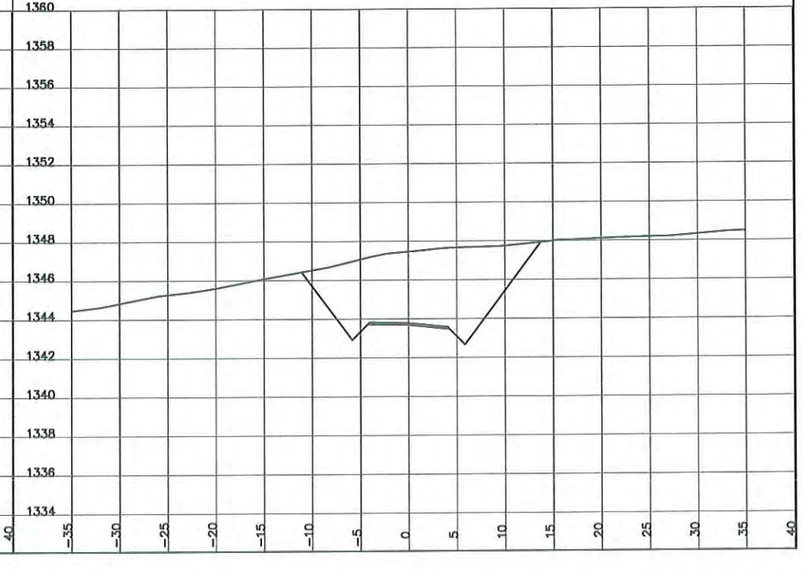
STATION 25+700.00
H= 1:600 V= 1:300

CUT= 5.34 FILL= 12.44



STATION 25+900.00
H= 1:600 V= 1:300

CUT= 75.65



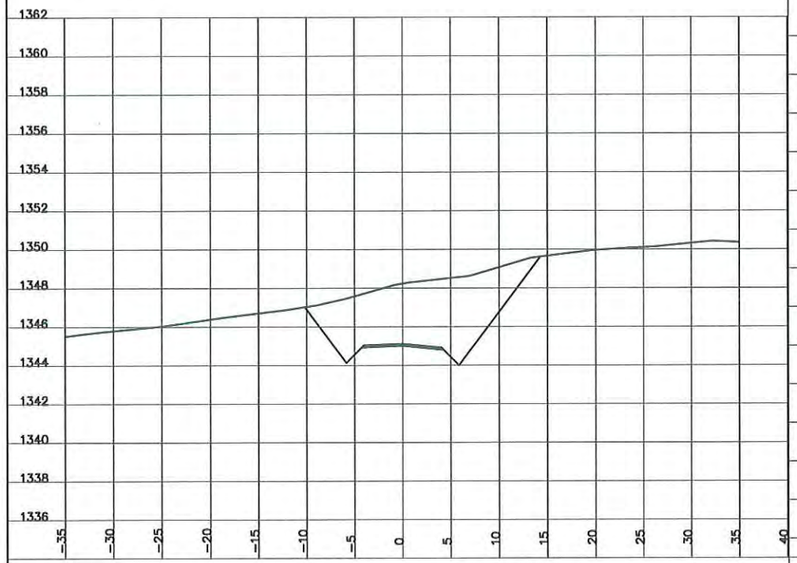
Layout1 (5) Nov 26, 2008

DESIGN CROSS SECTIONS
WOLVERINE MINE ACCESS ROAD
YUKON ZINC CORP.
NOVEMBER, 2008

STATION 26+000.00

H= 1:600 V= 1:300

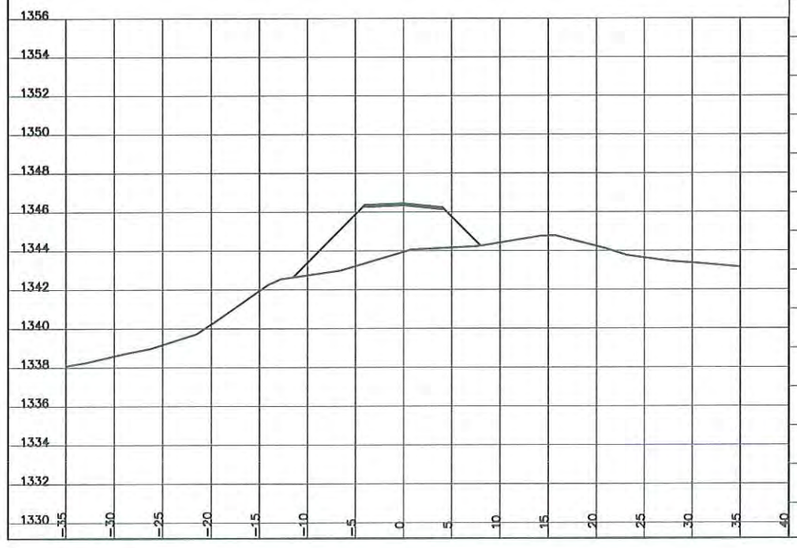
CUT= 65.29



STATION 26+100.00

H= 1:600 V= 1:300

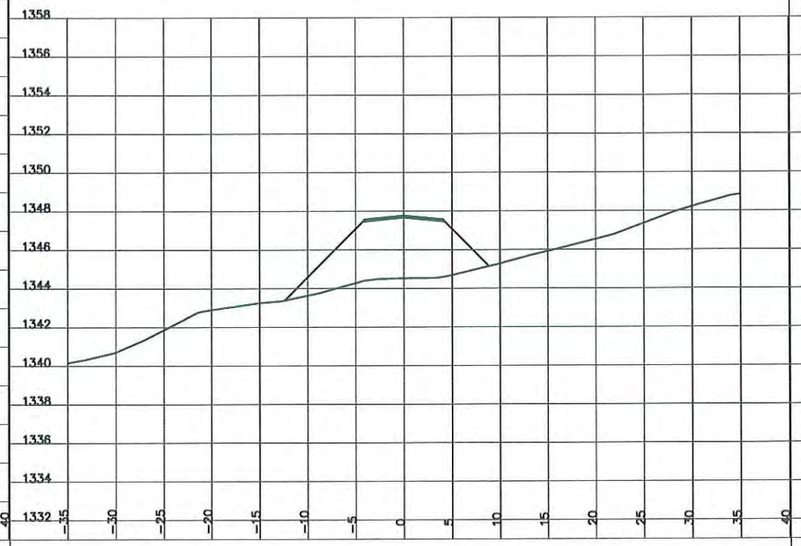
FILL= 35.35



STATION 26+200.00

H= 1:600 V= 1:300

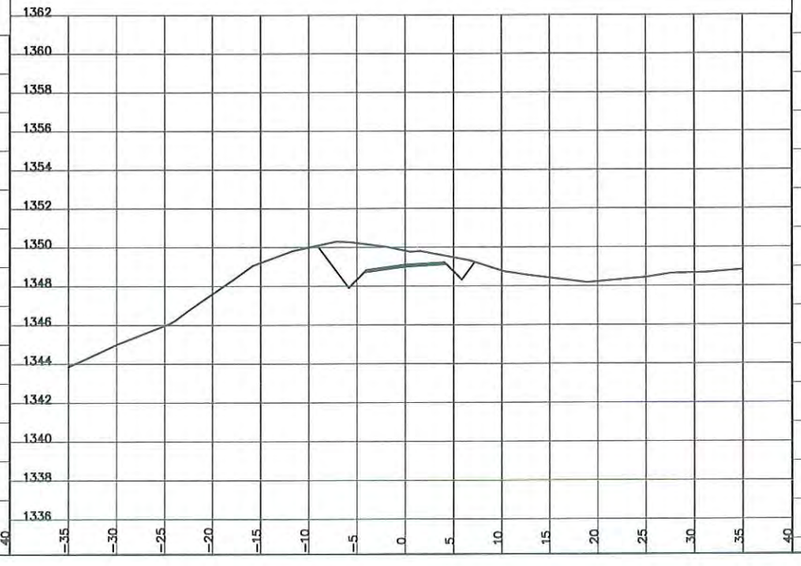
FILL= 45.39



STATION 26+300.00

H= 1:600 V= 1:300

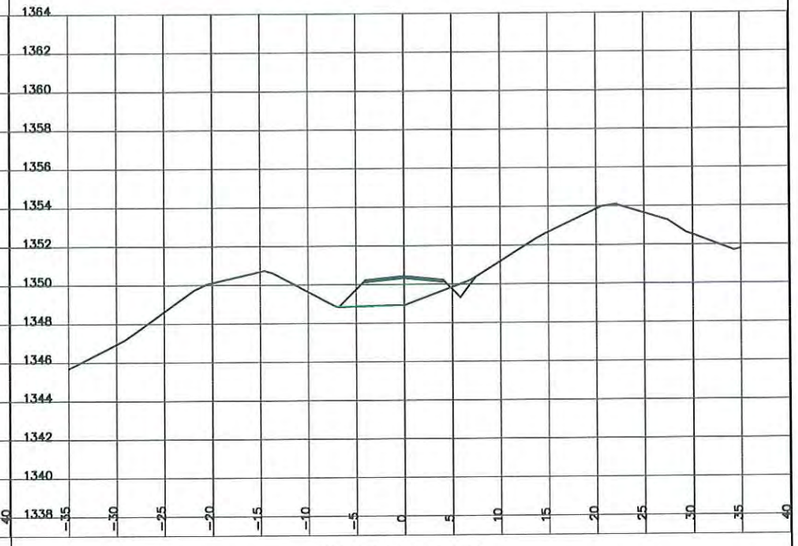
CUT= 16.74



STATION 26+400.00

H= 1:600 V= 1:300

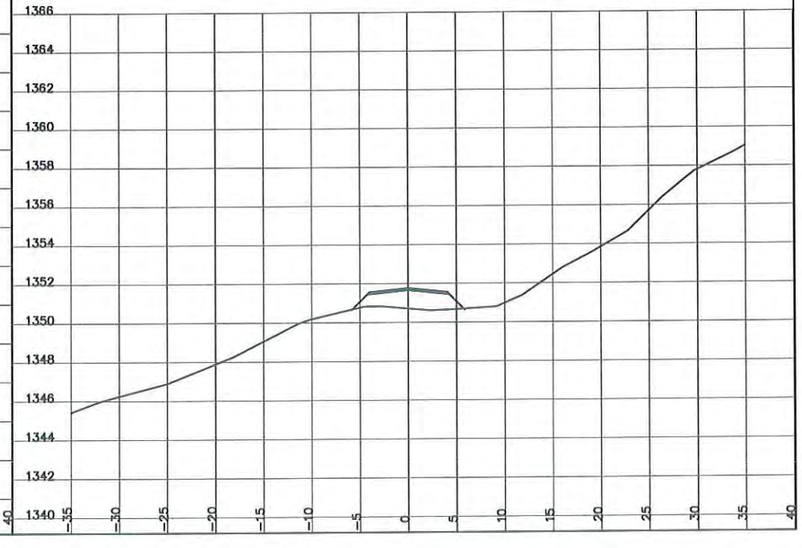
CUT= 0.87 FILL= 11.15



STATION 26+500.00

H= 1:600 V= 1:300

FILL= 8.14

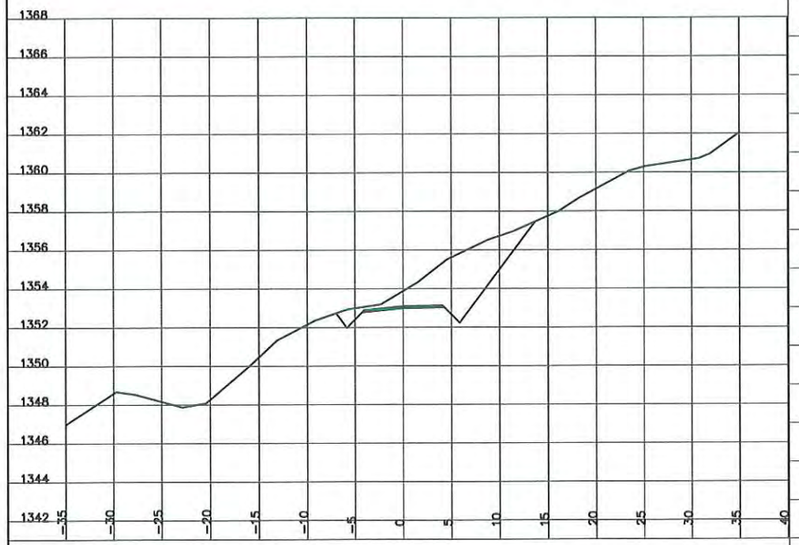


Layout1 (6) Nov 26, 2008

DESIGN CROSS SECTIONS
WOLVERINE MINE ACCESS ROAD
YUKON ZINC CORP.
NOVEMBER, 2008

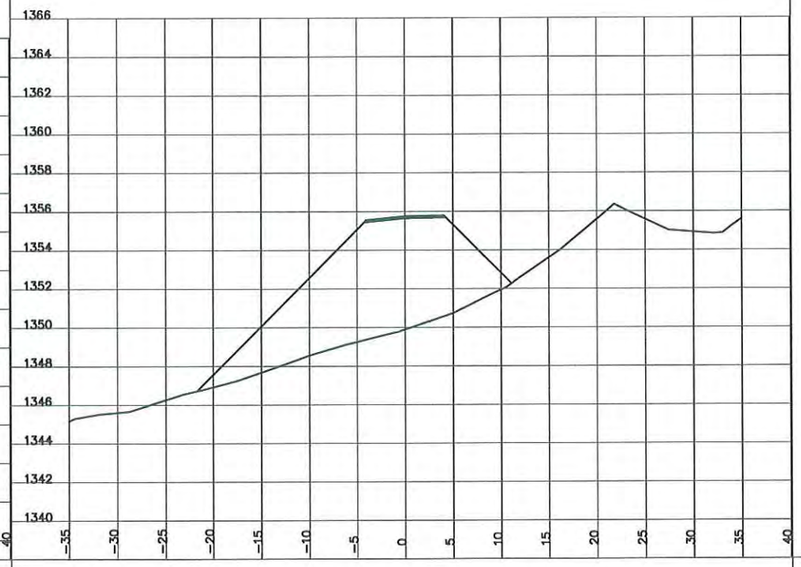
STATION 26+600.00
H= 1:600 V= 1:300

CUT= 29.16



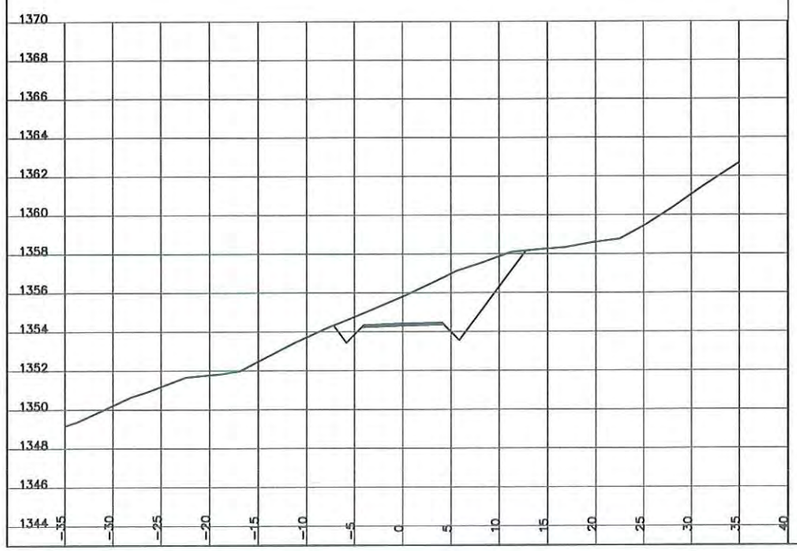
STATION 26+800.00
H= 1:600 V= 1:300

FILL= 119.34



STATION 26+700.00
H= 1:600 V= 1:300

CUT= 32.95



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