B3-10 Mid complex void(s) backfilling

Conceptual Mitigation Plan

Revision 1 – February 7, 2014

Golder Associates

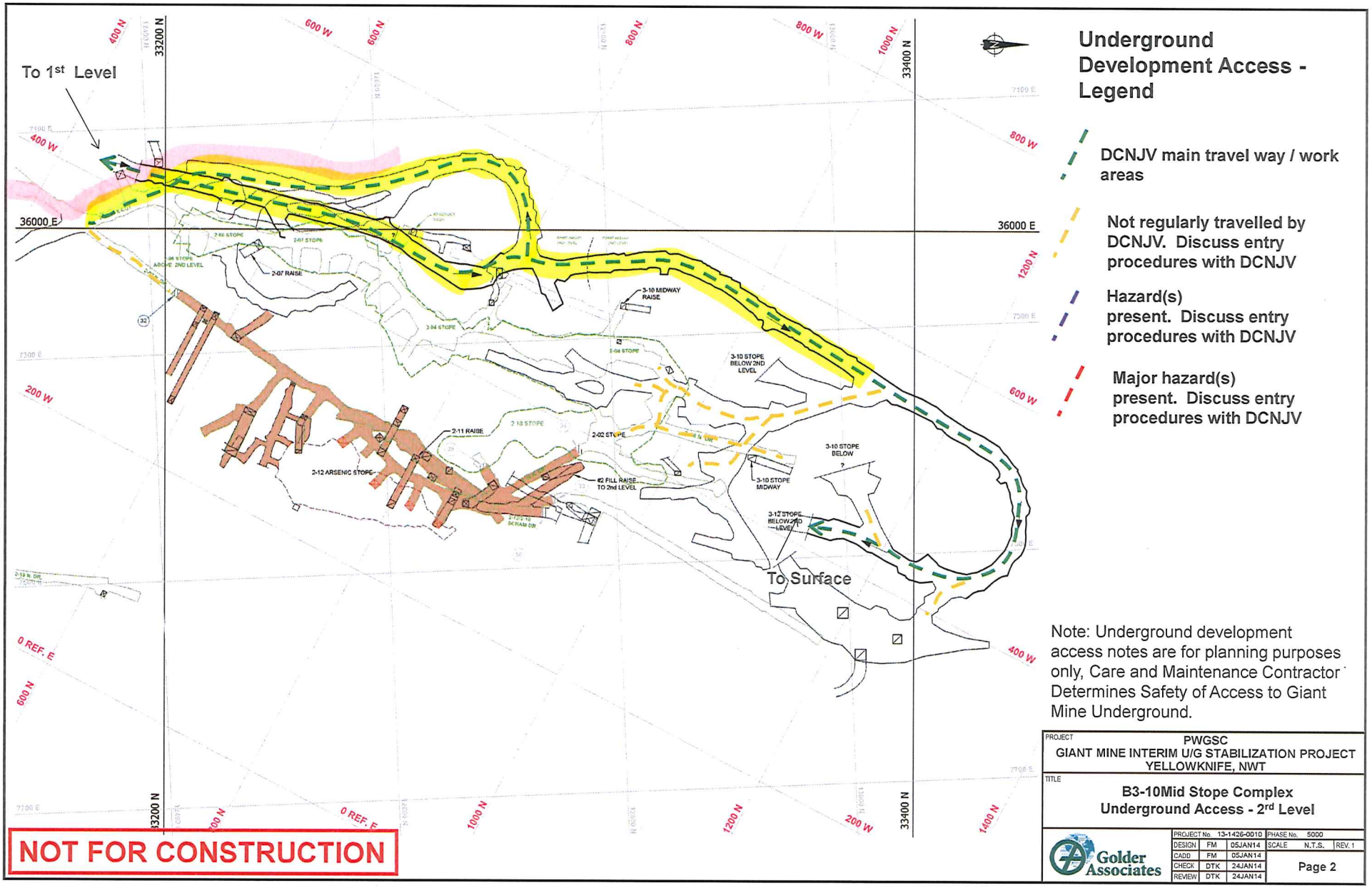
NOT FOR CONSTRUCTION

Note: Level plans shown are for illustrative purposes only, Use full size level plans and 3D digital model for planning purposes.

PROJECT	PWGSC GIANT MINE INTERIM U/G STABILIZATION PROJECT YELLOWKNIFE, NWT
TITLE	B3-10Mid Stope Complex Conceptual Mitigation Plan

Golder Associates	PROJECT No. 13-1426-0010		PHASE No. 5000		
	DESIGN	FM	05JAN14	SCALE N.T.S.	REV. 1
	CADD	FM	05JAN14	Page 1	
	CHECK	DTK	24JAN14		
	REVIEW	DTK	24JAN14		

File: O:\Active_2013\1426\13-1426-0010 Giant Mining Support Services\7000 - MSS-007 2014 Procure\Doc070_B3-10 Mid\03_Conceptual Mitigation Plan



Underground Development Access - Legend

- DCNJV main travel way / work areas
- Not regularly travelled by DCNJV. Discuss entry procedures with DCNJV
- Hazard(s) present. Discuss entry procedures with DCNJV
- Major hazard(s) present. Discuss entry procedures with DCNJV

Note: Underground development access notes are for planning purposes only, Care and Maintenance Contractor Determines Safety of Access to Giant Mine Underground.

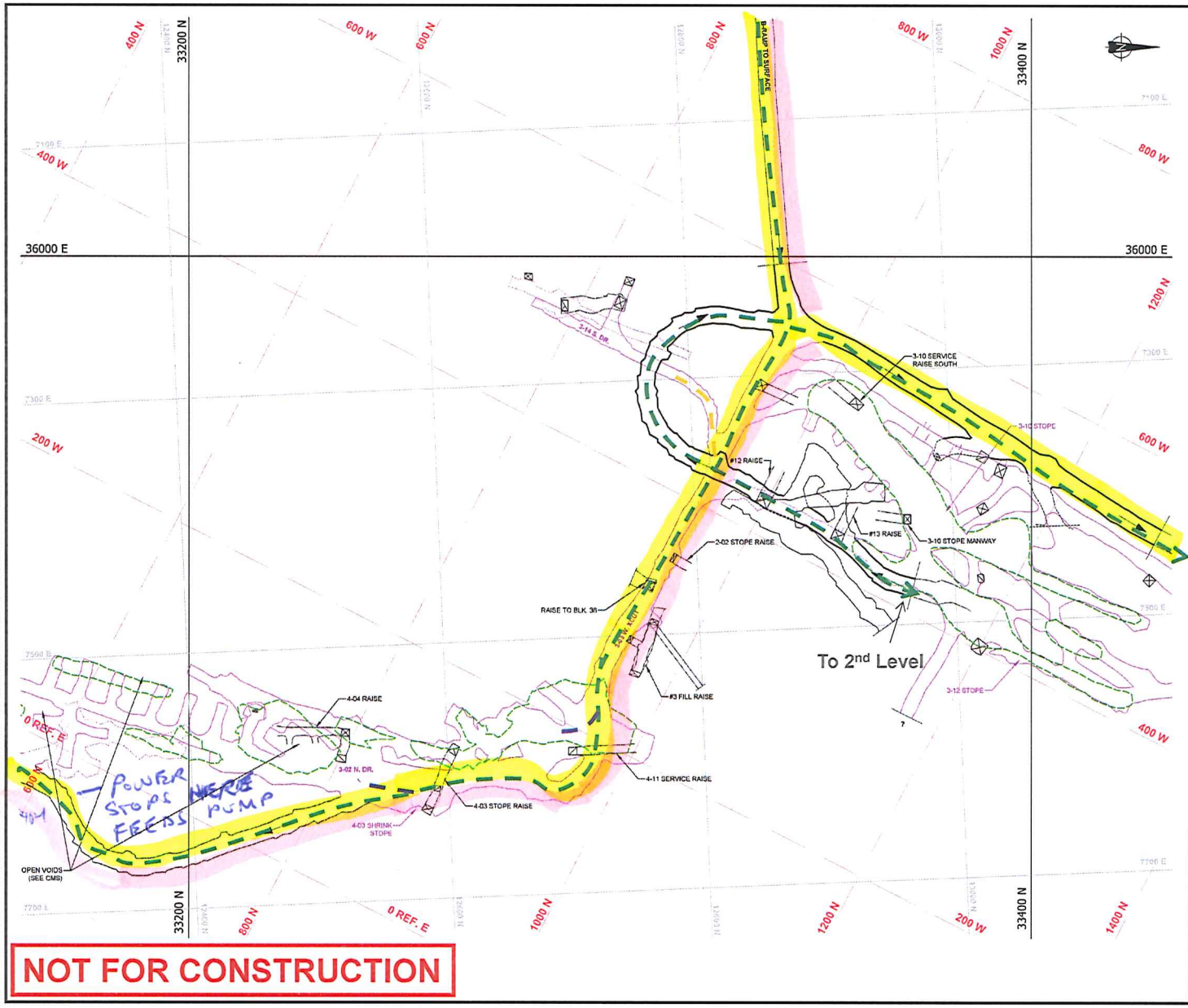
PROJECT: PWGSC
GIANT MINE INTERIM U/G STABILIZATION PROJECT
YELLOWKNIFE, NWT

TITLE: B3-10Mid Stope Complex
Underground Access - 2rd Level

Golder Associates

PROJECT No.	13-1426-0010	PHASE No.	5000		
DESIGN	FM	05JAN14	SCALE	N.T.S.	REV. 1
CADD	FM	05JAN14			
CHECK	DTK	24JAN14			
REVIEW	DTK	24JAN14			

File: O:\Active_2013\1426\13-1426-0010 Giant Mining Support Services\7000 - MSS-007 2014 Procure\Doc070_B3-10 Mid\03_Conceptual Mitigation Plan



Underground Development Access - Legend

- DCNJV main travel way / work areas
- Not regularly travelled by DCNJV. Discuss entry procedures with DCNJV
- Hazard(s) present. Discuss entry procedures with DCNJV
- Major hazard(s) present. Discuss entry procedures with DCNJV

Note: Underground development access notes are for planning purposes only, Care and Maintenance Contractor Determines Safety of Access to Giant Mine Underground

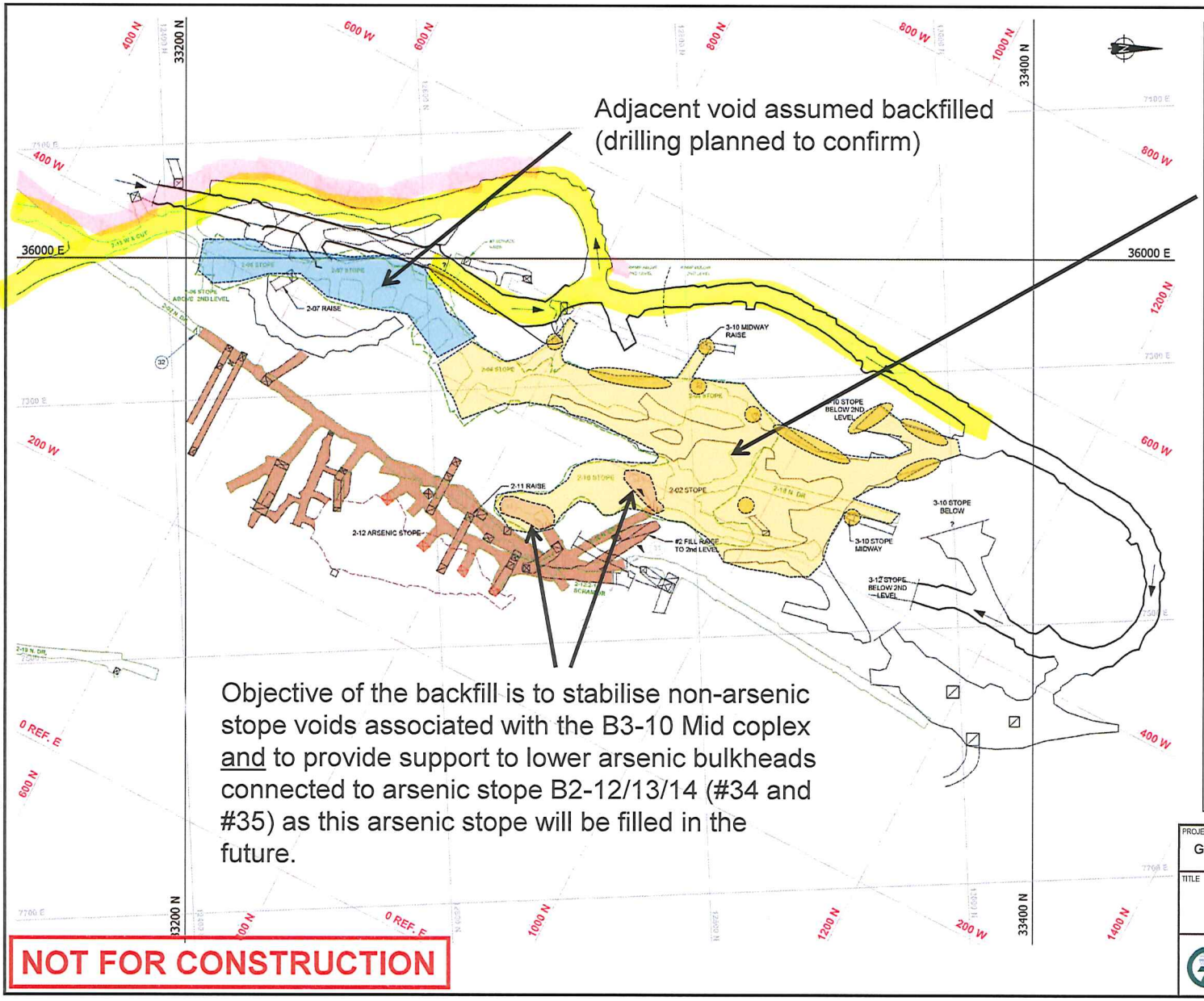
NOT FOR CONSTRUCTION

PROJECT	PWGSC GIANT MINE INTERIM U/G STABILIZATION PROJECT YELLOWKNIFE, NWT
TITLE	B3-10Mid Stope Complex Underground Access – 3rd Level

Golder Associates

PROJECT No.	13-1426-0010		PHASE No.	5000	
DESIGN	FM	05JAN14	SCALE	N.T.S.	REV.1
CADD	FM	05JAN14			
CHECK	DTK	24JAN14			
REVIEW	DTK	24JAN14			

File: O:\Active_2013\1426\13-1426-0010 Giant Mining Support Services\7000 - MSS-007 2014 Procure\Doc\070_B3-10 Mid\03_Conceptual Mitigation Plan



Target Area to be Backfilled

Consists of several inter-connected partially backfilled voids.

Void volume is not tightly constrained

Connections to lower levels (3rd and 4th level) exist which could allow paste backfill to escape. These include partially filled stopes (e.g. fill not tight to moderate dipping hangingwalls), sub-vertical raises and manways, etc.

Position of possible exit voids ○

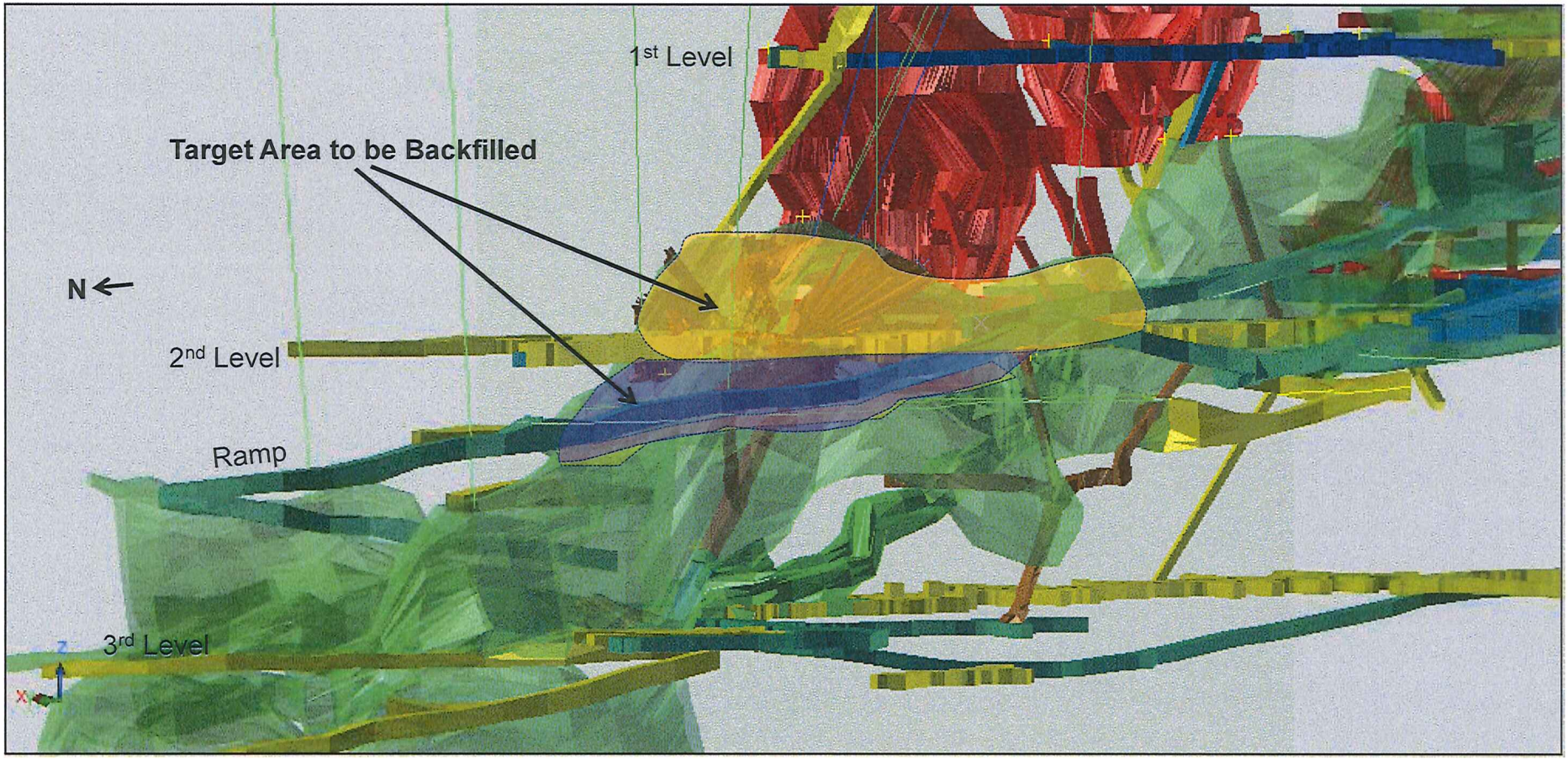
NOT FOR CONSTRUCTION

PROJECT	PWGSC GIANT MINE INTERIM U/G STABILIZATION PROJECT YELLOWKNIFE, NWT
TITLE	B3-10Mid Stope Complex Void Volumes and Exit Points – 2nd Level

Golder Associates

PROJECT No.	13-1426-0010	PHASE No.	5000		
DESIGN	FM	05JAN14	SCALE	N.T.S.	REV. 1
CADD	FM	05JAN14			
CHECK	DTK	24JAN14			
REVIEW	DTK	24JAN14			

File: O:\Active_2013\1426\13-1426-0010 Giant Mining Support Services\7000 - MSS-007 2014 Procure\Doc\070_B3-10 Mid\03_Conceptual Mitigation Plan



Isometric view of 3D Model – Looking East-Southeast

B3-10 Mid void volume below base of 2nd level: 6,000m³
B3-10 Mid void volume above base of 2nd level: 11,000m³

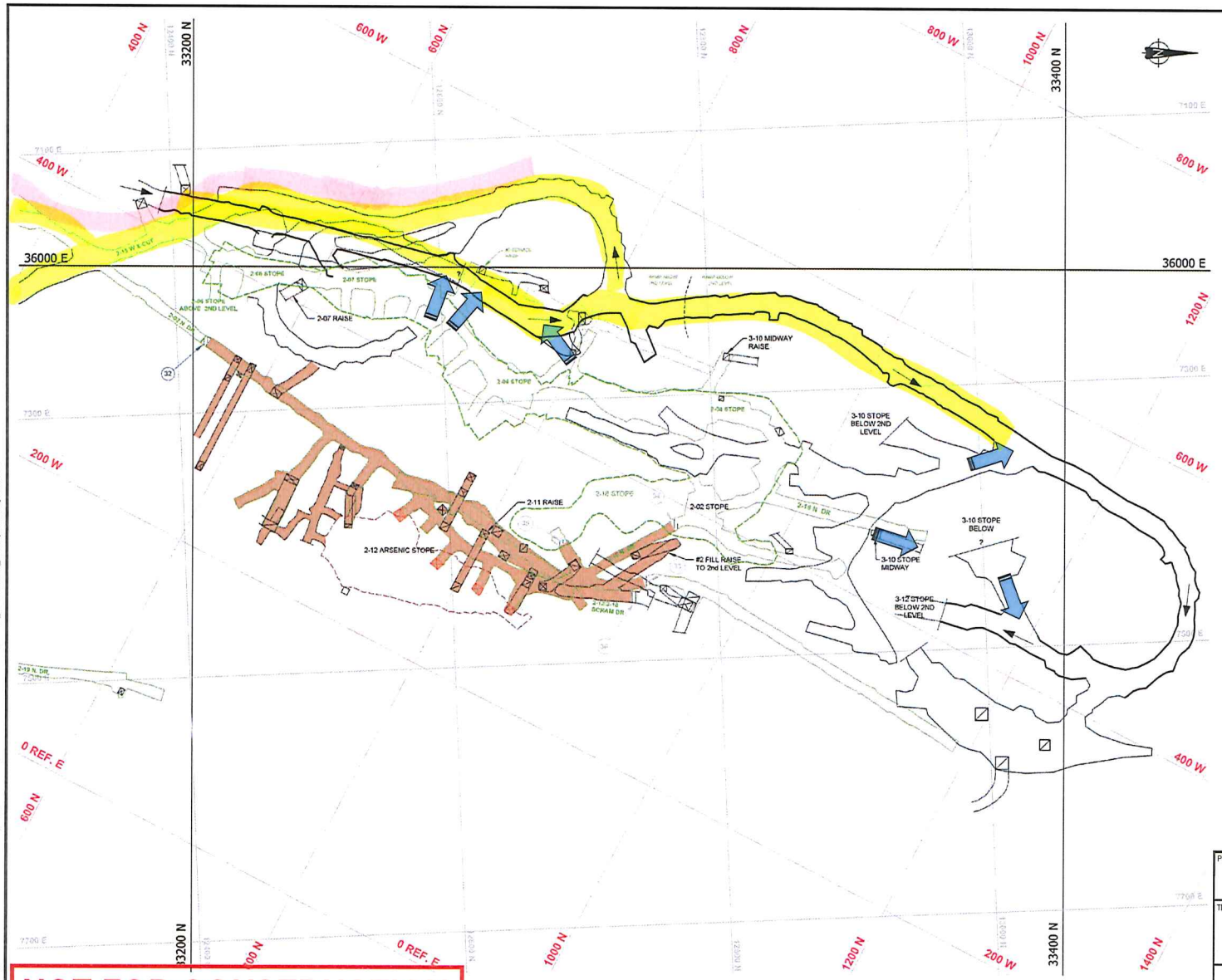
NOT FOR CONSTRUCTION

PROJECT	PWGSC GIANT MINE INTERIM U/G STABILIZATION PROJECT YELLOWKNIFE, NWT
TITLE	B3-10Mid Stope Complex Void Volumes

Golder Associates

PROJECT No.	13-1426-0010	PHASE No.	5000		
DESIGN	FM	05JAN14	SCALE	N.T.S.	REV. 1
CADD	FM	05JAN14			
CHECK	DTK	24JAN14			
REVIEW	DTK	24JAN14			

File: O:\Active_2013\1426\13-1426-0010 Giant Mining Support Services\7000 - MSS-007 2014 Procure\Doc-070_B3-10 Mid\03_Conceptual Mitigation Plan



Mandatory Blockages and Fill Volume Containment Points - Legend

- Mandatory paste blockage point
- Volume constraint point – man-entry
- Volume constraint point – no entry

Note: mandatory paste blockage points are required where known and obvious exit points from the target void to be backfilled are connected to critical mine development openings (e.g. access ramp or a ventilation shaft, etc.).

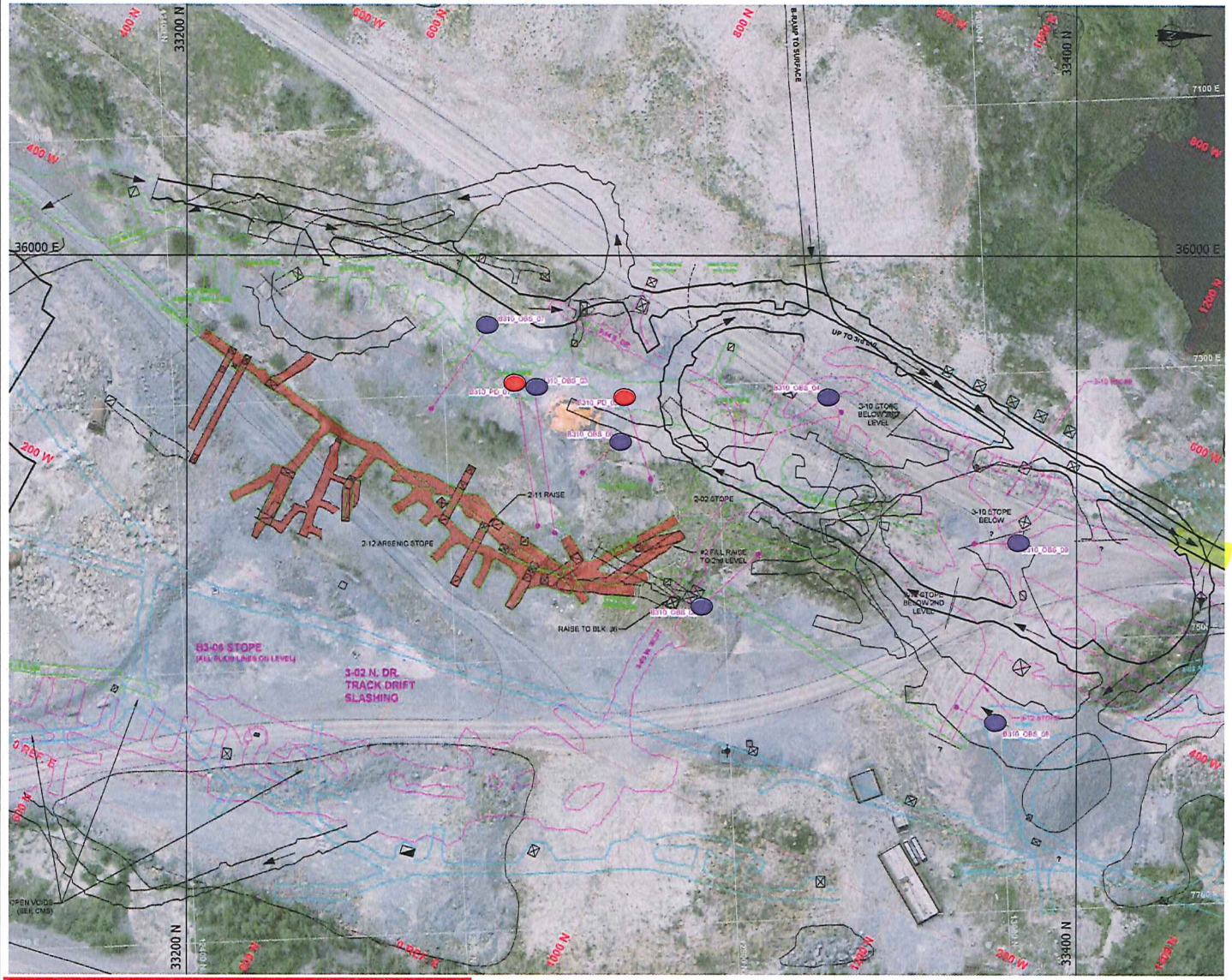
PROJECT: PWGSC
GIANT MINE INTERIM U/G STABILIZATION PROJECT
YELLOWKNIFE, NWT

TITLE: B3-10Mid Stope Complex
Mandatory Blockages and Fill Volume Containment Points - 2ND Level

Golder Associates

PROJECT No.	13-1426-0010	PHASE No.	5000		
DESIGN	FM	05JAN14	SCALE	N.T.S.	REV. 1
CADD	FM	05JAN14			
CHECK	DTK	24JAN14			
REVIEW	DTK	24JAN14			

File: O:\Active_2013\1426\13-1426-0010 Giant Mining Support Services\7000 - MSS-007 2014 Procure\Doc070_B3-10 Mid\03_Conceptual Mitigation Plan



NOT FOR CONSTRUCTION

Surface Borehole Collar - Legend

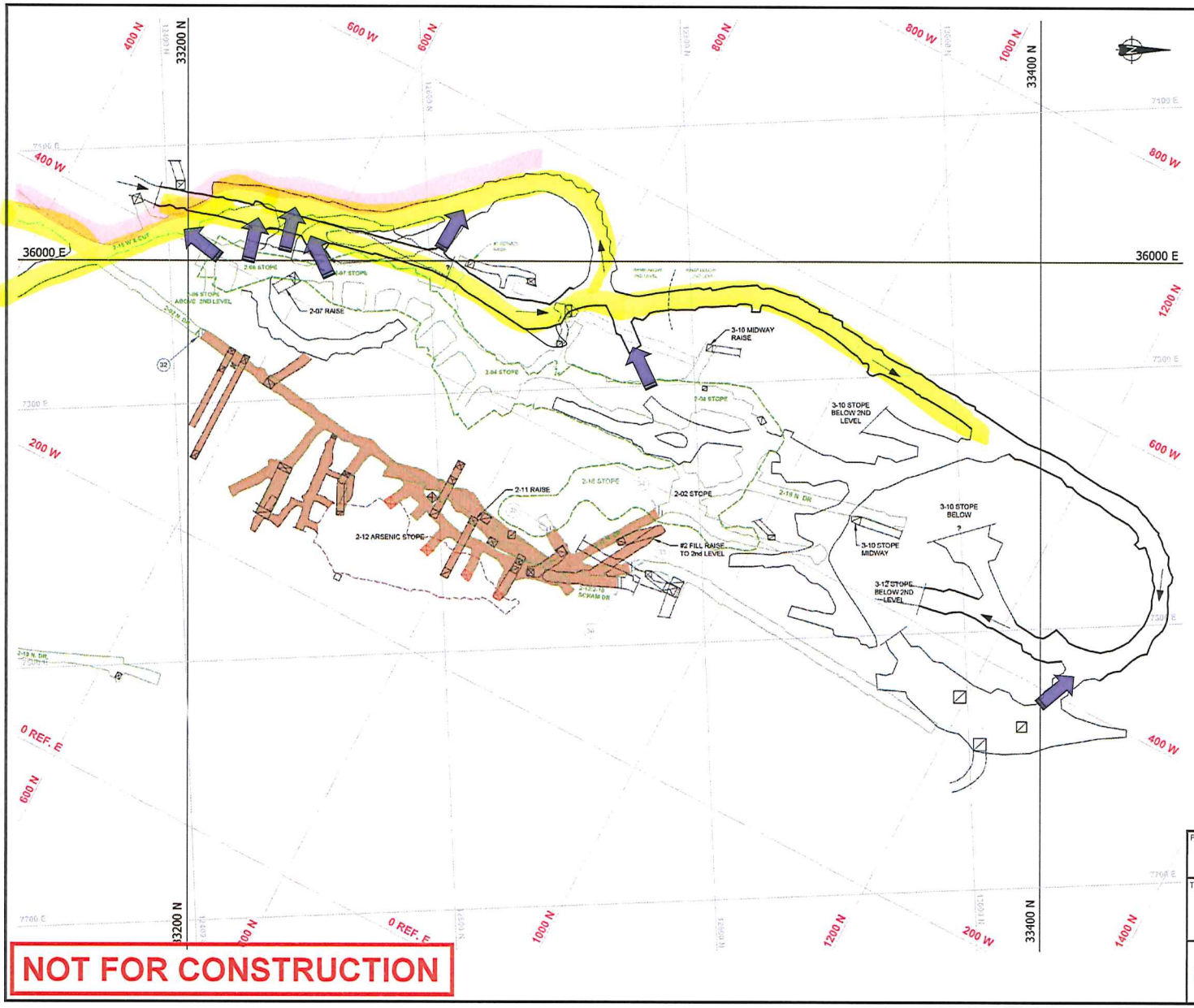
- Sub-vertical high slump bulk fill delivery borehole
- Sub-vertical low slump fill or foam delivery borehole
- Observation / breather / contingency high slump bulk fill delivery borehole
- Borehole drilled from underground

PROJECT: PWGSC
GIANT MINE INTERIM U/G STABILIZATION PROJECT
YELLOWKNIFE, NWT

TITLE: B3-10Mid Stope Complex
Surface Borehole Collars

Golder Associates

PROJECT No.	13-1426-0010	PHASE No.	8000		
DESIGN	DTK/FM	23JAN14	SCALE	N.T.S.	REV. A
CADD	FM	05JAN14			
CHECK	DTK	24JAN14			
REVIEW	DTK	24JAN14			



Possible Paste Backfill Leakage Points To Be Monitored - Legend

Possible paste exit point to be monitored – man-entry

Possible paste exit point to be monitored – no entry

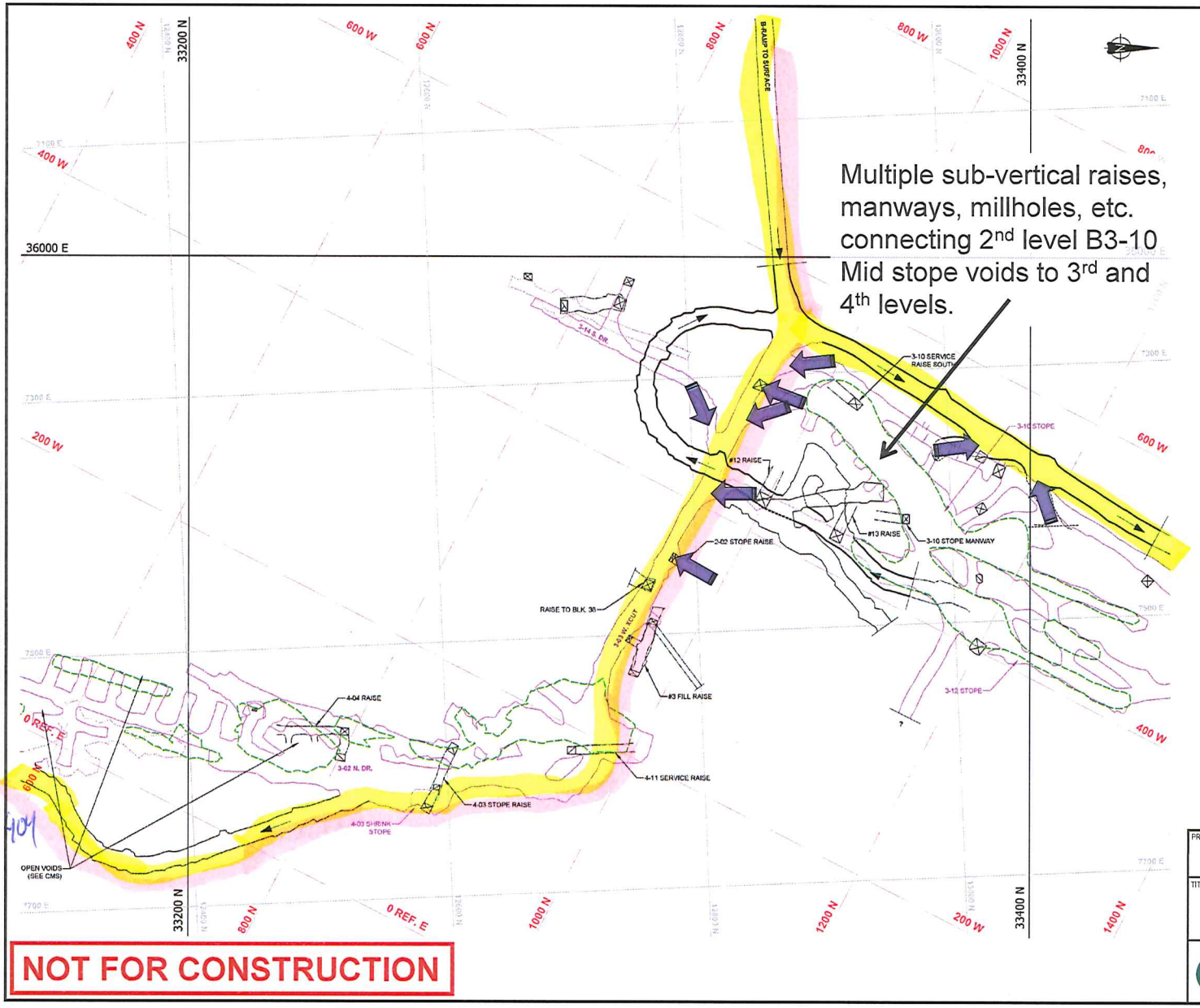
Note: These points show areas where paste may flow from the targeted void to be backfilled. These exit points must be monitored. Barricades or a change in paste delivery approach in the targeted void would be required to stop the leak.

PROJECT	PWGSC GIANT MINE INTERIM U/G STABILIZATION PROJECT YELLOWKNIFE, NWT
TITLE	B3-10Mid Stope Complex Possible Paste Exit Points To Be Monitored – 2nd Level

Golder Associates

PROJECT No.	13-1426-0010	PHASE No.	5000		
DESIGN	FM	05JAN14	SCALE	N.T.S.	REV. 1
CADD	FM	05JAN14			
CHECK	DTK	24JAN14			
REVIEW	DTK	24JAN14			

File: O:\Active_2013\1426\13-1426-0010 Giant Mining Support Services\7000 - MSS-007 2014 Procure\Doc070_B3-10 Mid\03_Conceptual Mitigation Plan



Possible Paste Backfill Leakage Points To Be Monitored - Legend

Possible paste exit point to be monitored – man-entry

Possible paste exit point to be monitored – no entry

Note: These points show areas where paste may flow from the targeted void to be backfilled. These exit points must be monitored. Barricades or a change in paste delivery approach in the targeted void would be required to stop the leak.

NOT FOR CONSTRUCTION

PROJECT	PWGSC GIANT MINE INTERIM U/G STABILIZATION PROJECT YELLOWKNIFE, NWT
TITLE	B3-10Mid Stope Complex Possible Paste Exit Points To Be Monitored – 3rd Level

Golder Associates

PROJECT No.	13-1426-0010		PHASE No.	5000	
DESIGN	FM	05JAN14	SCALE	N.T.S.	REV. 1
CADD	FM	05JAN14			
CHECK	DTK	24JAN14			
REVIEW	DTK	24JAN14			

File: O:\Active_2013\1426\13-1426-0010 Giant Mining Support Services\7000 - MSS-007 2014 Procure\Doc\070_B3-10 Mid\03_Conceptual Mitigation Plan